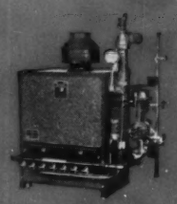
GAS

ENGINEERING • UTILIZATION • LOAD-BUILDING • MANAGEMENT

Bryant Blankets

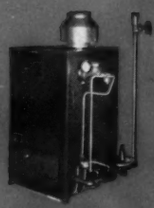
THE GAS HEATING AND AIR CONDITIONING MARKETS

BOILERS FOR STEAM, VAPOR AND HOT WATER HEATING

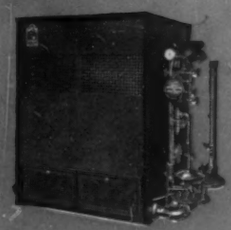

MODEL 22 BOILER

MODEL 253 BOILER

MODEL 255 BOILER


MODEL 443 BOILER

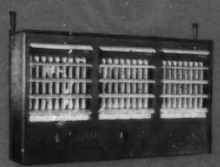
MODEL 455 BOILER

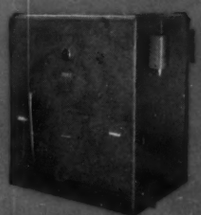

MODEL 63 BOILER

FOR WARM AIR HEATING

MODEL 1-A-85 UNIT HEATER

MODEL 2-A-85 UNIT HEATER


MODEL 3-A-85 UNIT HEATER


MODEL L-75 FURNACE

MODEL 850 HEATER

FOR WINTER AIR CONDITIONING

MODEL AC-78
WINTER AIR CONDITIONER

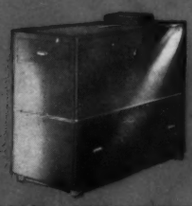
FOR SPLIT SYSTEMS

BRYANT DUALATOR

FOR EXISTING HEATING PLANTS

MODEL 95
CONVERSION BURNER

FOR SUMMER AIR CONDITIONING & INDUSTRIAL DRY AIR PROCESSING


MODEL 6 DEHUMIDIFIER
Larger sizes are Models 14, 27 and 50

FOR ADDED ECONOMY

AUTOMATIC FLUE DAMPER

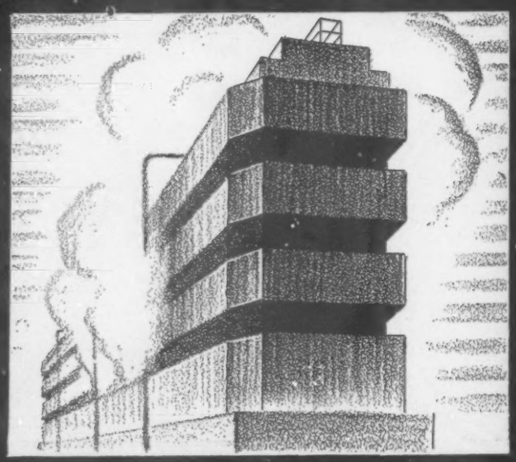
Let the Pup be your furnace man ... and weatherman, too.

THE BRYANT HEATER COMPANY

17825 ST. CLAIR AVENUE • • • • CLEVELAND • OHIO

JULY 1937 • • 25 CENTS

TRAFFIC LAWS *for Wind and Water*



TP 700
.P3

Streams in a prairie waste follow meandering courses, —but have little economic value. And winds blow where they will,—usually without profit to man. Benefits come only from elements under control.

Cooling towers involve both wind and water. Wind blows, water drips and water blows with the wind. Fluor was first to conceive the idea of engineering a cooling tower with both wind and water under control, for the economic benefits that would result. Fluor Aerator Type Cooling Towers are the realization of this idea. In them, water follows paths predetermined by scientific principles for greatest spread, consistent with fastest dissipation of heat. In them, wind gets a stop signal or a speed limit, and water carried by it is caught and goes its way according to law, without waste.

Water in the ocean is free, but industrial water costs money. Fluor Aerator Cooling Towers demonstrate their economies in industry throughout the world to an aggregate capacity of five billion gallons of water per day.

Fluor Aerator Type Towers are built of California Redwood, famed for its endless durability. Double staggered bowed panel cooling decks effect perfect water filming; patented Aerator baffles prevent loss of water by wind; both designs are exclusive to Fluor Aerator Type Towers. For space economy, water economy, good appearance and long life, be sure with Fluor. Bulletin T236 contains valuable engineering data and is completely descriptive.

FLUOR BE SURE WITH FLUOR **AERATOR TYPE COOLING TOWERS**

THE FLUOR CORPORATION, LTD. Main Office and Plant: 909 East 59th Street, Los Angeles, California
909 McCormick Building, Chicago, Illinois • 703 Fairfax Building, Kansas City, Missouri • 934 M & M Building, Houston, Texas
710 Canadian Pacific Building, New York City, N. Y. • 719 McBirney Building, Tulsa, Oklahoma

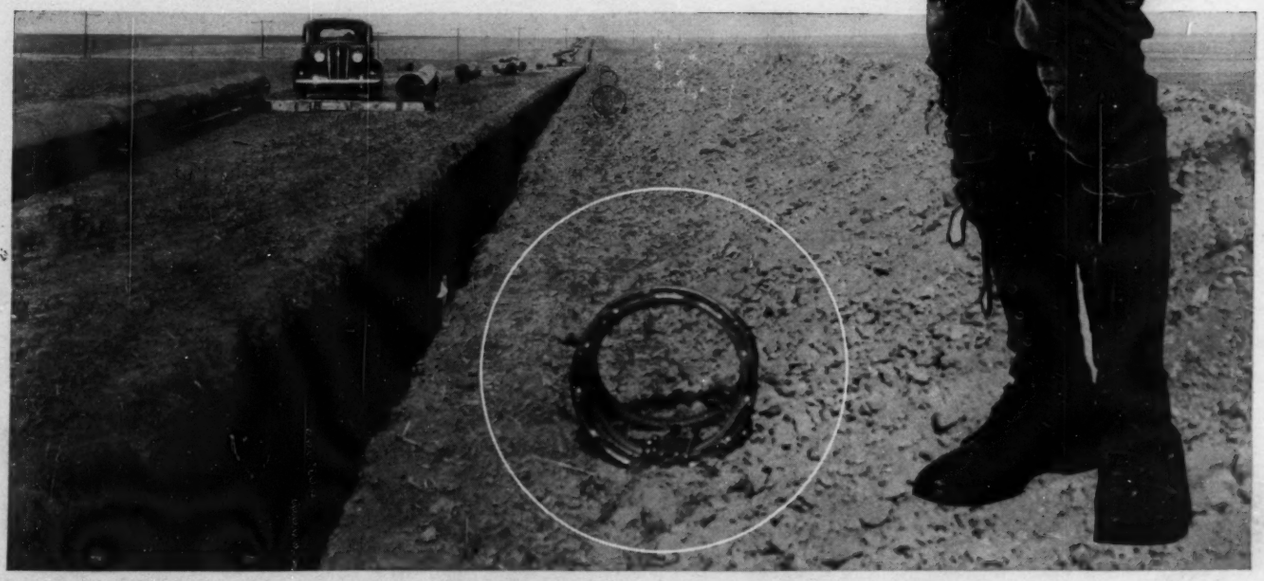
5
Pat 2
3894
5742
1
42

"THERE'S NO GUESSWORK ON A DRESSER-COUPLED LINE — THE JOINTS ARE FACTORY-MADE"

Note to Reader
This is the fifth in a series of advertisements dramatizing one engineer's experience with his first Dresser-coupled line. For the complete story, write for Bulletin No. 351.

On a Dresser-coupled line, everything is *standard.* There are no "variables" to go wrong—nor to worry about. "*Factory-built*" joint parts are simply assembled, *not fabricated,* in the field. • Dresser Couplings can be field-assembled in only one way—the *permanently tight* way! Chances for human error are eliminated. • And —because only one tool (a wrench) is required—ordinary laborers can easily do the trick!

S. R. DRESSER
MFG. COMPANY · BRADFORD, PA.
In Canada: Dresser Mfg. Company, Ltd., 60 Front St., W., Toronto, Ont.



nw. 9/23/39

ADVERTISERS' INDEX

The American Brass Co.	11
American Liquid Gas Corp.	—
American Meter Co.	12
American Stove Co.	33
The Barber Gas Burner Co.	50
Barber-Greene	68
The Barrett Co.	3
Barton Brown Engineering Corp.	—
H. R. Basford Co.	72
Blaw-Knox Co.	73
The Bristol Co.	—
Bryant Heater Co.	1st Cover
The Cast Iron Pipe Research Ass'n.	3rd Cover
The Chaplin-Fulton Manufacturing Co.	59
Clark Bros. Co.	4
Clark Hotel	—
The Cleveland Trencher Co.	—
Condensation Engineering Corp.	71
Connelly Iron Sponge & Governor Co.	58
The Cooper-Bessemer Corp.	8
Crane Co.	9
Cribben & Sexton Co.	10
Dearborn Chemical Co.	68
Detroit-Michigan Stove Co.	—
Domestic Manufacturing Co.	68
S. R. Dresser Manufacturing Co.	1
Electrogas Furnace & Mfg. Co.	58
Ensign Carburetor Co., Ltd.	60
Fluor Corporation, Ltd.	2nd Cover
Fraser Furnace Co.	72
General Controls	64
General Gas Light Company	—
James Graham Manufacturing Co.	45
Greenlee Tool Co.	69
Handbook, Butane Propane Gases, 2nd Edition and Supplement	62
Johnson Gas Appliance Co.	66
Kerotest Manufacturing Co.	62
Kitson Co.	66
Lycoming Manufacturing Co.	—
Merco-Nordstrom Valve Co.	41, 42
Milwaukee Gas Specialty Co.	74
Minneapolis-Honeywell Regulator Co.	58
L. J. Mueller Furnace Co.	70
Mueller Co.	74
The National Supply Co.	5
National Tube Co.	—
Natural Gas Equipment, Inc.	38
Norge Division, Borg-Warner Corp.	—
Pacific Coast Gas Association, Inc.	55
Pacific Gas and Electric Co.	65
Pacific Gas Radiator Co.	67
Pacific Meter Works	12
Parkhill-Wade, Inc.	7
Payne Furnace & Supply Co.	34, 35
Pittsburgh Equitable Meter Co.	41, 42
Porcelain Enamel Institute	49
Pressed Steel Tank Co.	63
Reliance Regulator Corp.	56
Republic Steel Corp.	—
Reynolds Gas Regulator Co.	71
Robertshaw Thermostat Co.	29
George D. Roper Corp.	—
Ruud Mfg. Co.	—
Safety Gas Main Stopper Co.	70
Servel, Inc., Electrolux Sales Div.	30, 31
Spencer Thermostat Co.	66
The Sprague Meter Co.	4th Cover
Stevens Hotel	54
United States Pipe & Foundry Co.	6
United States Steel Corp.	—
Ward Heater Co., Ltd.	27
Waukesha Motor Company	72
Webster Engineering Co.	—
Welsbach Co.	73
The Wilcolator Company	47
Williams-Wallace Co.	67
Worthington Pump & Machinery Corp.	—

MEMBER AUDIT BUREAU OF CIRCULATIONS

GAS

Reg. U. S. Pat. Off.

Formerly Western Gas

LOS ANGELES	CHICAGO	HOUSTON
810 South Spring Street	1064 Peoples Gas Building	306 Shell Building
Phone MIchigan 1481	Phone HARrison 8536	Phone Capitol 2093

JAY JENKINS, Publisher
ARTHUR ROHMAN, Managing Editor
W. G. RUSSELL, Field Representative

CRAIG ESPY, Assistant Publisher
ANATOL FOMILYANT, Southwest Editor
E. M. ALLEN, News Editor

Contents for July, 1937

The "Sales-Service" Plan . . . . . *By L. F. Galbraith* 13

Building Load with Gas Engines for Power Generation . . 14
By R. S. Wenner

Tell 'Em—Sell 'Em 17

Steam Tables and Coffee Urns in Air-Conditioned Restaurants . 18
By J. Robert Delaney

G A S Camera 19

ABSTRACTS BY THE STAFF:

Maintaining High Efficiencies in Pipe Line Systems . . . 20
By J. C. Reinbold

Home Service and the Sales Manager . *By Bernard T. Franck* 22

Kitchen Planning . . . . . *By Harry Swenson* 23

Effect of Gas Changes on a Distribution System *By C. D. Robison* 25

The Large Appliance Market in the New Small Home . . . 28
By A. F. H. Scott

MEASUREMENT AND CONTROL 57

Steam Measurement by Orifice Meter . . *By P. W. Hill* 57

BUTANE-PROPANE NEWS 61

Liquefied Petroleum Gas Sales Expand During 1936 . . . 61

July, 1937. Volume XIII, Number 7. G A S is published monthly by Western Business Papers, Inc., at 810 South Spring Street, Los Angeles, California. Jay E. Jenkins, President; Craig Espy, Vice-president; George H. Finley, Vice-president; James E. Jenkins, Secretary-Treasurer. Subscription price (in advance) 25 cents the copy. $1.00 per year; other than U. S., $2.00 per year. Entered as second class matter August 20, 1936, at the post office at Los Angeles, Calif., under the Act of March 3, 1879. Copyright, 1937.

Official Publication: Pacific Coast Gas Association; Southern California Meter Association.

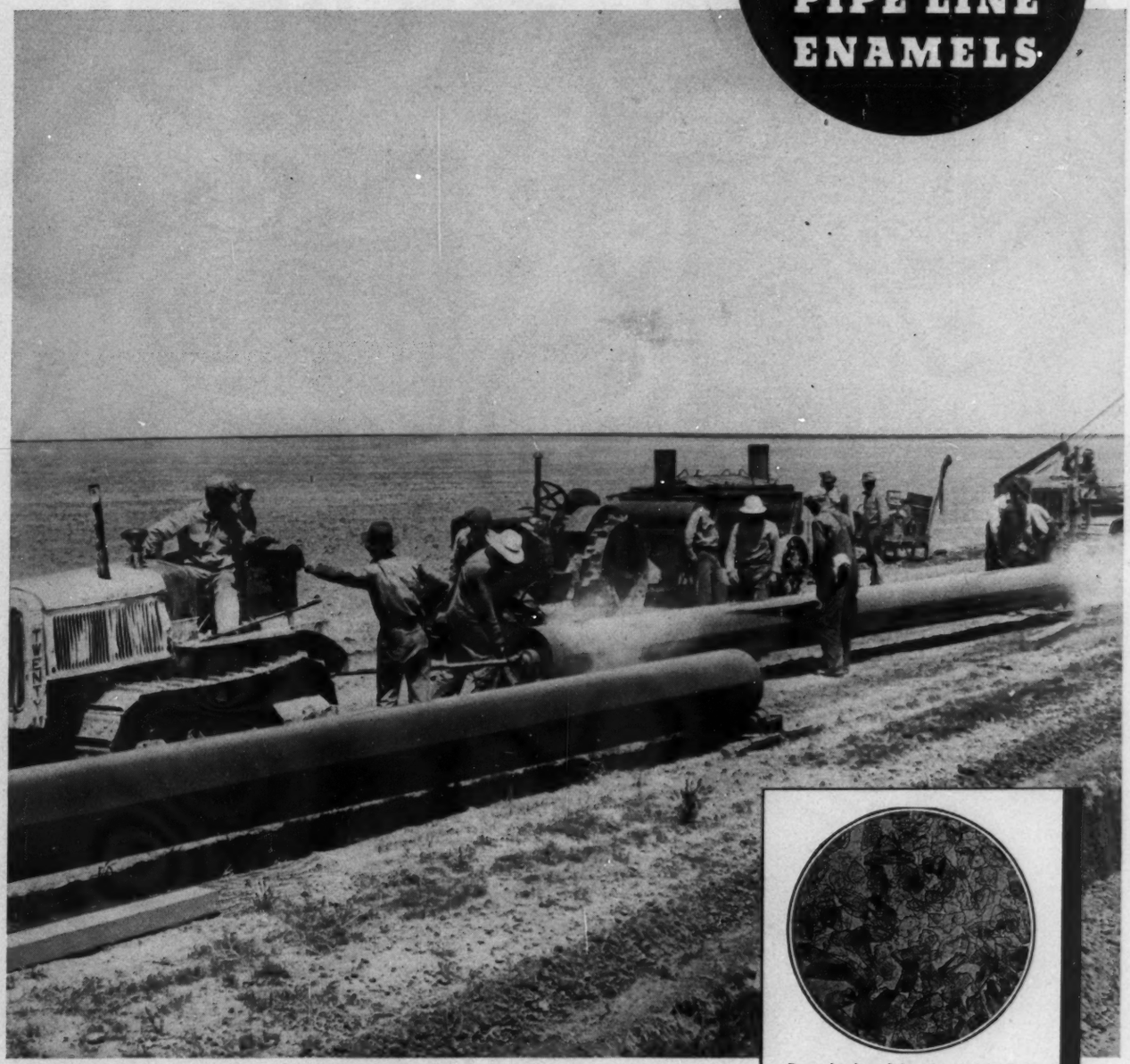
Member: Audit Bureau of Circulations; Associated Business Papers, Inc.

Publishers: OIL & GAS *Equipment Review;* HANDBOOK OF BUTANE-PROPANE GASES (Two Editions).

MAXIMUM PROTECTION

at minimum cost per year

Barrett PIPE LINE ENAMELS



Reproduction of the micrograph above shows the interlocking of the flakes of the internal reinforcement used by Barrett. By laminating with the waterproofing agent, they give Barrett Pipe Line Enamels unusual toughness and resistance to soil stresses.

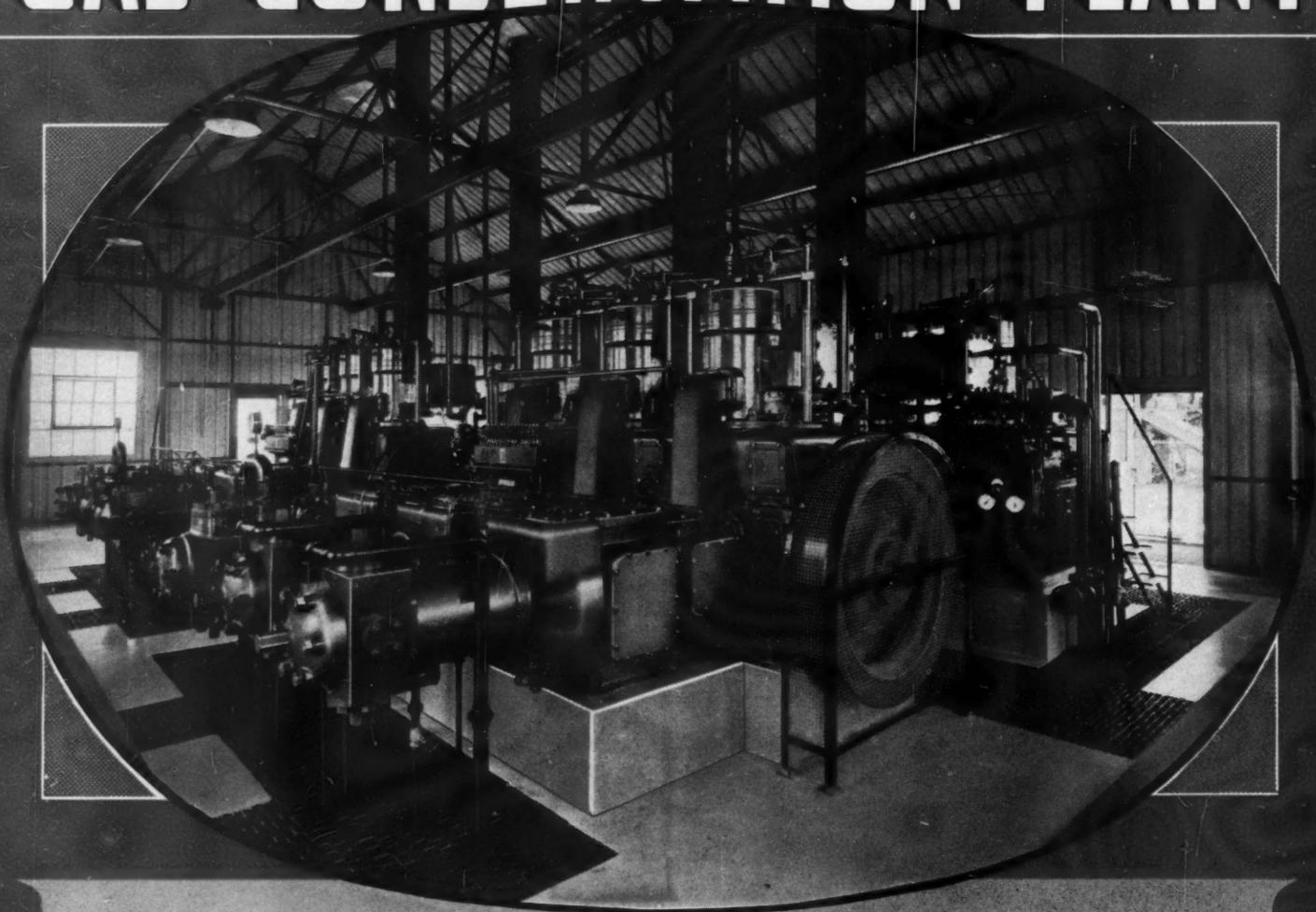
For pipe of large diameter, The Barrett Company will furnish equipment required to revolve pipe and spread enamel.

LOW cost per year over long periods of useful life is assured on pipe lines protected by Barrett Enamels. The Coal-tar Pitch, of which Barrett Pipe Line Enamels are made, is the most stable of known bituminous substances. Barrett skill in compounding means further basic economies through ease of field application.

THE BARRETT COMPANY, 40 RECTOR STREET, NEW YORK, N. Y.

FIELD SERVICE The Barrett Company maintains a Pipe Line Service Department to assist engineers in all coating problems, and also has available Field Service men whose assistance is offered where Barrett's protective coatings are used. Inquiries are invited.

WORLD'S HIGHEST PRESSURE GAS CONSERVATION PLANT



This pressure maintenance plant of the Continental Oil Company, at Tepetate, Louisiana, contains 4 CLARK 300-H.P. "Super-2-Angle" Compressors delivering 2,000,000 cu. ft. of gas a day each, from 350 pounds suction pressure, 3,600 pounds discharge pressure. Units have been operated at maximum pressure of 4,600 pounds.

Write for Complete Description of this Plant

CLARK BROS. COMPANY . . . . Olean, New York, U.S.A.

Export Office: 30 Rockefeller Plaza, New York. Midcontinent Sales Offices and Warehouses: Tulsa, Okla., and Houston, Texas. West Coast Office: Smith-Booth-Usher, 2001 Santa Fe Ave., Los Angeles, Cal. Foreign Offices: 72 Turnmill St., E. C. 1, London, England; 4 Str. General Poetas, Bucharest, Roumania.

CLARK

DAYTON

No. 5 Coupling

For repairing broken steel lines where a section of pipe must be removed. It also has a wide range of service with valve installations.

THE NATIONAL SUPPLY CO. OF DELAWARE
DAYTON COUPLING DIVISION · · TOLEDO · OHIO

Lithographed on stone by James E. Allen for U. S. Pipe & Foundry Co. Copyright 1937.

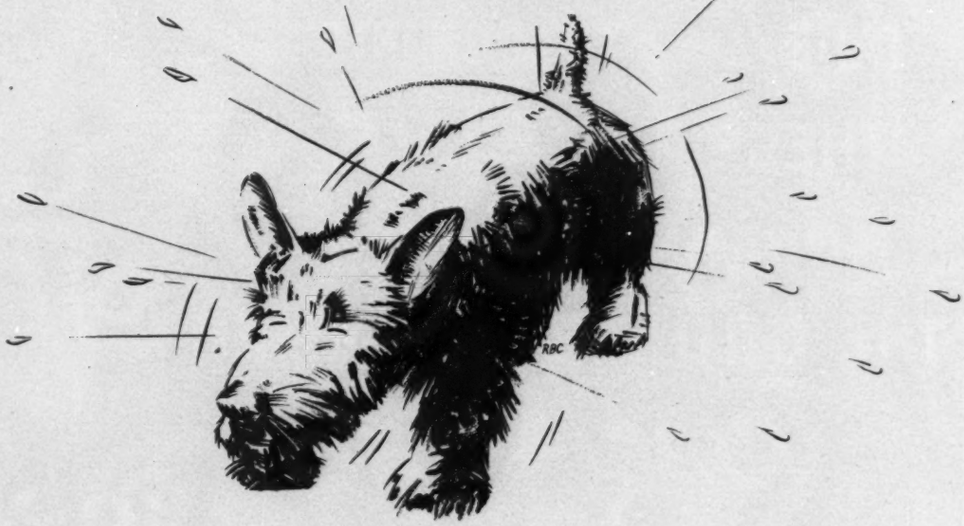
THAT LONG LIFE is inherent in cast iron pipe is demonstrated by century-old water and gas mains still in service. For these veterans were made before the introduction of such great improvements in cast iron pipe manufacture as vertical pouring (pit cast pipe) and centrifugal casting. Obviously, the cast iron pipe buyer today gets a still finer and more uniform product. For example, Super-de Lavaud Pipe, centrifugally cast in a metal mold *without chill* by our patented process, combines perfect concentricity and uniform wall thickness with high tensile strength and extraordinary resistance to impact.

U.S. cast iron PIPE

Cast iron and alloy cast iron pipe centrifugally or pit cast — for water works, gas, sewerage and drainage service as well as industrial uses involving corrosives.

U. S. PIPE & FOUNDRY CO.
BURLINGTON, NEW JERSEY
Foundries and Sales Offices throughout the U. S.

Scotty HAS THE RIGHT IDEA!



WHEN "Scotty" wants to dry after a swim in the ocean, he gets *instant results* through reversal of motion induced by muscular action—*and does the water fly!*

The next time you see this common sight, observe it carefully. Let "Scotty" give you an *authentic demonstration* of the gas-drying action employed by the *patented* Mist-D-Fier Gas Scrubber. A thousand words will never describe Mist-D-Fier's action more exactly, more completely or more graphically.

Mist-D-Fier doesn't depend on the production of a variable centrifugal force induced by merely permitting a free-flowing gas stream to swirl in a circular vessel. Mist-D-Fier's action *is far more positive* because, like "Scotty", Mist-D-Fier constantly reverses the gas flow. The free-flowing gas stream is interrupted by a series of specially designed vertical baffle plates which continually force the gas stream to reverse its direction of flow and—again like "Scotty"—Mist-D-Fier literally shakes entrained liquids loose from the vapor. That's why Mist-D-Fier delivers gas *as dry as the desert air!*

Whatever your scrubbing problem may be, the patented Mist-D-Fier will solve it effectively, efficiently. Your files should contain a copy of our new catalog completely describing Mist-D-Fier. *Write for it today!*

PARKHILL-WADE INC
CONSULTING AND
CONSTRUCTION ENGINEERS
973 NORTH MAIN STREET
LOS ANGELES CALIFORNIA

MIST-D-FIER GAS SCRUBBERS

12 IMPROVED COMPRESSOR PLATE VALVES

1 EFFECTIVE SCAVENGING

2 INSTANT REGULATION

3 ACCURATE FUEL ADJUSTMENT

4 COMPLETE ACCESSIBILITY

5 LONG LIFE CYLINDER HEADS

6 CONVENIENT SCALE REMOVAL

7 POSITIVE COOLING

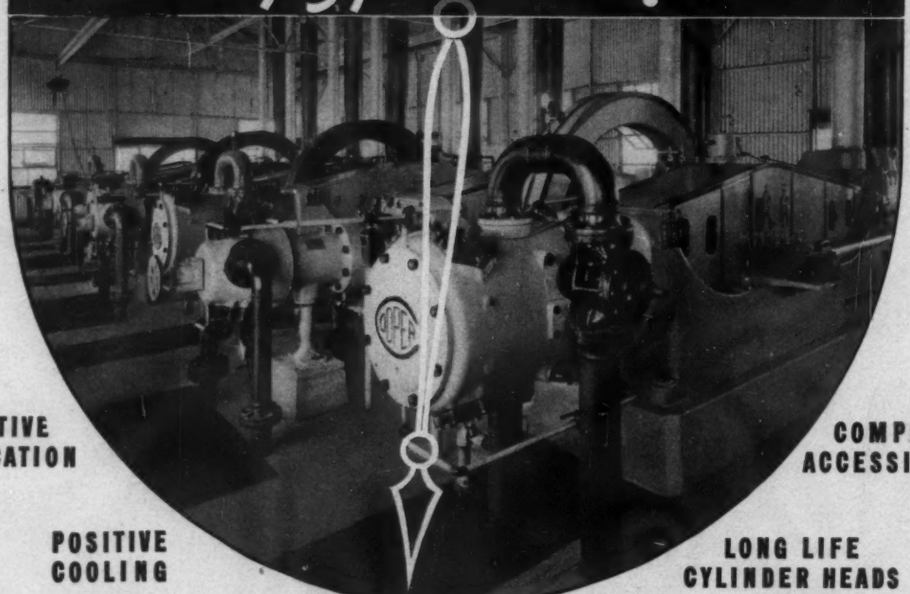
8 POSITIVE LUBRICATION

9 SEPARATE MAGNETOS

10 INVERTIBLE EXHAUST

11 ADJUSTABLE BEARINGS

TAKE *Time* TO LOOK INTO THESE TWELVE MODERN FEATURES OF THE COOPER-BESSEMER *Type 12!*



THE COOPER-BESSEMER CORPORATION

Mount Vernon, Ohio — PLANTS — Grove City, Pennsylvania

25 West 43rd St. New York City | Mills Building Washington, D. C. | 640 East 61st St. Los Angeles, Calif. | 201 East 1st St. Tulsa, Oklahoma | 631 Spring St. Shreveport, La. | Magnolia Bldg. Dallas, Texas | 53 Duncan St. Gloucester, Mass. | Esperson Bldg. Houston, Texas

38,000 ANSWERS...

AT YOUR FINGER TIPS

The Crane No. 52 Catalog contains the answers to your valve, fitting or piping problems—answers supported by 82 years of experience.

Throughout American industry, thousands of practical men make use of the convenience, speed and safety of keeping a new Crane No. 52 Catalog handy. And that's just what you'd expect, for this catalog is the largest of its kind in the world. It contains more items, more dimensions and more engineering data than any other similar book. It has more illustrations, more reference tables, more ways of keeping abreast of what's new and proved. More solutions to your problems.

Whatever your next specifications are, look to your Crane catalogs first. For most "new" valve problems Crane has a solution, proved and ready for use. Look to your Crane No. 52 and other catalogs for the details of over 38,000 items, tested in the laboratory and on the job. Use them when you need valves, fittings, pipe or accessories. CranEquip for satisfaction.

CRANE

CRANE CO., GENERAL OFFICES: 836 S. MICHIGAN AVE., CHICAGO, ILLINOIS

Branches and Sales Offices in One Hundred and Sixty Cities

VALVES, FITTINGS, FABRICATED PIPE, PUMPS, PLUMBING AND HEATING MATERIAL

...plied in the next few days.

FROM CASING HEAD TO KITCHEN BURNER

TULSA, OKLA., Dec. 18—All along the line of natural gas—from the casing head to city limits—Crane valves, fittings and fabricated pipe are wonderful guardians of the natural gas which you must deliver.

CranEquip the system for which you are responsible for Crane has the equipment which will serve you best. Approximately 600 Crane distributors and branches have stocks of valves, fittings and pipe. That means quick service to your operations almost anywhere in the country. Buying from a single source simplifies your work, unifies responsibility for quality and service.

Keep Crane Catalog Handy

Construction, maintenance and emergency problems involving piping are generally quickly solved by referring to your Crane No. 52 Catalog for equipment which will help you. Among the 38,000 items listed there is an answer to practically every pipe-line need. There are also many pages of engineering data which may be of great assistance to you. Learn to know your way around in your Crane catalog.

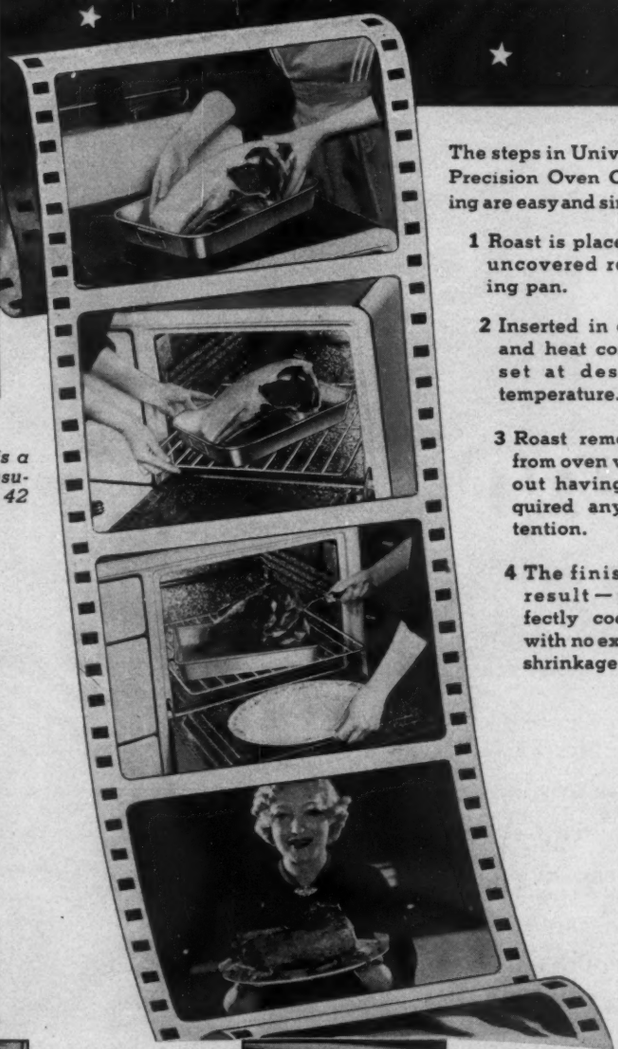
★ THE GAS SERVICE IS ONLY AS MODERN AS THE GAS RANGE ★

THE UNIVERSAL

PRECISION OVEN

WITH ITS CONTROLLED CIRCULATING HEAT MAKES OVEN COOKING SIMPLE, CERTAIN, TIME-RELEASING!

The Chatham Universal is a six burner, double oven range, unusually compact, requiring only 27 x 42 inches of floor space.



The steps in Universal Precision Oven Cooking are easy and simple.

1 Roast is placed in uncovered roasting pan.

2 Inserted in oven and heat control set at desired temperature.

3 Roast removed from oven without having required any attention.

4 The finished result — perfectly cooked with no excess shrinkage.

● The Universal, with its perfectly balanced and complete uniform heat distribution throughout the oven, makes possible a standard of performance far beyond the average Homemaker's expectations — and far beyond the capabilities of the ordinary or outmoded gas range oven to achieve.

The outstanding performance of the Universal Precision Oven is a factor of definite value to the gas utility company as it guarantees a new appreciation of the true merits of gas as the ideal cooking fuel.

In oven cooking, in top burner cooking, and in broiling, the Universal offers a degree of service that stamps the Universal as a range that gives the utmost in convenient and time-releasing cooking performance.

The low temperature Precision Oven with uniform temperatures of 250° or lower makes possible successful oven canning

Four cakes can be baked at one time with the guarantee of perfect results. Cakes will be of even grain and fine texture.

A whole meal can be cooked to perfection without attention or transference of odors from one food to the other.

UNIVERSAL GAS RANGES

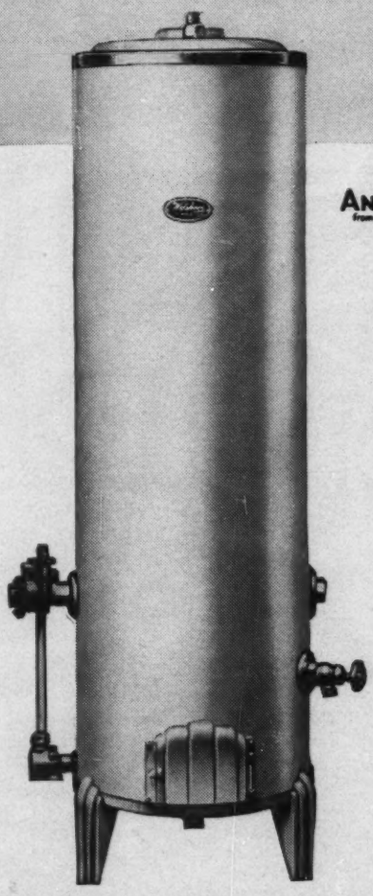
Manufactured by Cribben & Sexton Company, 700 N. Sacramento Boulevard, Chicago, Illinois

"Made of Everdur Metal"

What more can be said—when the customer wants non-rust water heating equipment?

Use your Laundry's Way of getting Clean Hot Water!
With a hot water tank of non-rust EVERDUR Metal
HOT WATER free from rust is a necessity to the modern laundry. And clean hot water will make your home and housework far more pleasant.
To get it—do as the boundless do! They install hot water tanks of non-rust EVERDUR Metal. In this way, they not only make sure of a permanent supply of rust-free hot water, but at the same time end the expense of repairs and replacements due to rust.
Just tell your plumber or utility company that you want non-rust EVERDUR Metal for the tank in that new automatic water heater. Or for the new range boiler you intend buying. The cost will be moderate—and in the years of trouble-free service you'll get, EVERDUR Metal will prove an actual economy.
P.S. Non-rust piping is important, too! Anaconda Deoxidized Copper Tubes for hot and cold water lines mean clear, clean water always. Cost is but little more than that of rustable piping.
FREE! "Copper, Brass and Bronze in the Home" tells how easy and cheap it is now to rustproof your home. Send for a copy.
Like Wilson Laundry, which does the laundering for Wellesley College students, takes no chances on rust stains. Their water heaters are rustproof EVERDUR Metal. You can have an automatic water heater with tank of this same metal, or a range boiler, for moderate cost.
EVERDUR is a trade-mark of The American Brass Company registered in the U.S. Pat. Off.
More than 55 makers of automatic water heaters and storage tanks standardize on Everdur Metal for non-rust equipment.
Everdur Metal
RUSTLESS AS COPPER • STRONG AS STEEL
THE AMERICAN BRASS COMPANY, General Offices: WATERBURY, CONNECTICUT
Offices and Agencies in Principal Cities . . . . . In Canada: ANACONDA AMERICAN BRASS LTD., New Toronto, Ont.

ANACONDA
from mine to consumer



Welsbach Hotzone Master Line Automatic Storage Gas Water Heater—made by the Welsbach Company of Gloucester City, N. J. All non-rust models have tanks of EVERDUR . . . the metal which is standard with more than 50 makers of household water heating equipment.

OVER a long period of years, EVERDUR* Metal has proved its superiority for non-rust tanks. This Anaconda metal is rustless as copper, yet strong as steel. It welds readily, and makes up into virtually "one-piece" tanks which are second to none in ruggedness and durability.

Because of the long, trouble-free service they render, water heaters with tanks of non-rust EVERDUR Metal are money-savers for the customer . . . profit-makers for the utility. They mean steady, uninterrupted consumption of gas, fewer service calls . . . make possible more attractive term payment plans.

EVERDUR has been nationally advertised year after year and is being kept before the public this year in a bigger way than ever before.

*EVERDUR is a trade-mark of The American Brass Company registered in the United States Patent Office. 37155

Everdur Metal

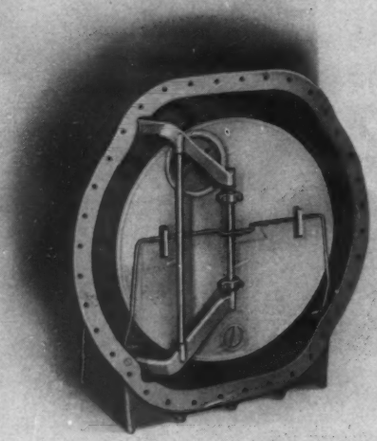
(ANACONDA'S COPPER-SILICON ALLOY)

THE AMERICAN BRASS COMPANY, General Offices: WATERBURY, CONNECTICUT

Offices and Agencies in Principal Cities . . . . In Canada: ANACONDA AMERICAN BRASS LTD., New Toronto, Ont.

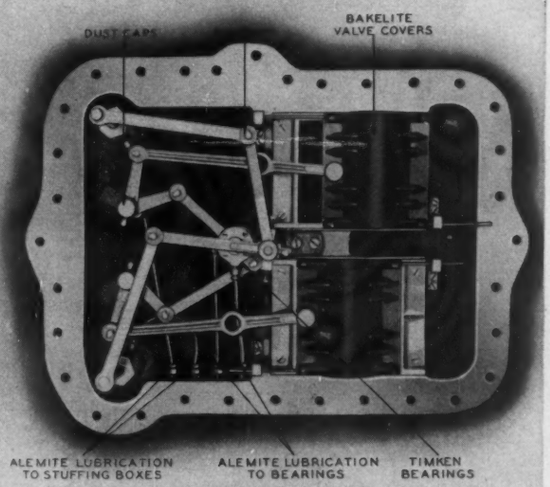
To the last *detail* . . .

After all, the accuracy and the economy of a meter over a period of years hinge not upon just one or two outstanding features . . . but upon every detail of design, materials, construction. METRIC IRONCASE METERS give you many outstanding features plus painstaking engineering to the last detail! . . . such as the body construction of fine gray iron cast in one piece to prevent internal leaks, and specially processed inside to resist corrosion.

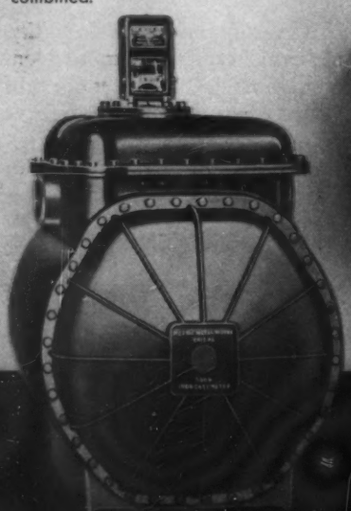


The back disc of the Metric Ironcase Meter diaphragm is fastened rigidly to middle partition. In the 500-B Ironcase Meter here illustrated, the step for the lower end of long flag rod is equipped with Timken bearings, that are Alemite-lubricated. Another distinctive feature is the full bellows, to insure accuracy throughout the entire Ironcase line.

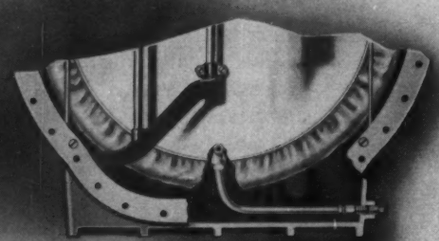
This Slide Valve construction . . . characteristic of 500-B and 250-B Ironcase Meters . . . shows the reduced angular movement and the features of design which lessen friction and prolong wear. Special materials and metal alloys are used for valves and valve seats. Dust caps also protect the Alemite-lubricated bearings. Friction loss is cut to a minimum.



Write for information on Base Pressure Index or Base Volume Index which give a corrected reading for pressure or for pressure and temperature combined.



TYPE 500-B
With Base Pressure Index



Adequate provision for draining condensate from diaphragm and case interiors, contributes to efficient diaphragm action. The illustration shows drain connection . . . leading from the bottom of diaphragm to outside of case . . . utilized in Ironcase Meters 80-B and larger. Ironcase diaphragm leathers . . . in form, quality, special tanning and oil treatment . . . also are a highly important factor in accurate gas measurement.

ESTABLISHED 1836

AMERICAN METER COMPANY
INCORPORATED

PACIFIC METER WORKS • LOS ANGELES • SAN FRANCISCO

825

These and other important features fully described in Catalog EG-40

July, 1937

GAS

Vol. XIII, No. 7

THIRTEENTH YEAR OF PUBLICATION

LOS ANGELES
810 South Spring Street

CHICAGO
1064 Peoples Gas Bldg.

HOUSTON
306 Shell Bldg.

THE "SALES-SERVICE" PLAN

Through Trained Representatives a Pacific Coast Utility Brings Company Good Will to Customers

By L. F. GALBRAITH
Pacific Gas and Electric Company

"FOR 17 years I've been a customer of your company. During that time I've seen the collector frequently. And the meter reader on fleeting occasions. I know the names of some company officials. But there has been nothing in my relationship with the 'company' to indicate there is any record or knowledge of my 17 years of paying light and gas bills."

L. F. GALBRAITH

An unusual circumstance brought to light the foregoing comment. The customer might never have realized this rather distant relationship, had not a serious complaint initially handled by a capable but new employee brought about this comment on relationship. But extreme as the case might be or seem to be, the question may well be raised as to how many customers might come to feel the same way. And from this comes the thought as to what the routine meter reading, billing and collecting of a public utility possesses in the way of "good will" production. Regardless of how nearly perfect a service may be and regardless of how humanly the routine may be carried on, it is a question whether this type of customer contact alone can be depended upon to create and hold an active interest and loyal attitude toward the company.

Now of course this is not the whole story of company contact and service to all its customers. Many experienced utility men will acknowledge that the customer has to request something beyond the ordinary or register a complaint to get out of the routine group class and obtain some of the fine special service which the utilities are anxious to render. That is to say, the initiative in getting out of the number so-and-so class must be taken by the customer himself. Assuming that an occasional customer does this and is handled in a way to create a live good will, there still remain thousands of unknown customers who depend upon institutional advertising for their enthusiasm toward the utility. But there is a practical and productive way for the company to take the initiative in making a contact to personalize its relation with its customers. And that is sound merchandising with carefully selected and trained men—trained and directed in a way to make every transaction one of lasting customer benefit. That is personalizing customer relationship in a way that is remembered. The thousands of contacts incidental to merchandise involving no sale can be made a personal service—at least a personal offer of service.

Organizing for such a domestic merchandise service is comparatively simple. Just follow a practice which has been followed for years. District the sales-service representatives. It's a matter of mathematics and money as to how many customers may be alloted to each district and representatives. Of course other factors have a bearing, such as the class of appliances to be handled, but generally speaking the first rule will be found governing at present.

But selecting the district men, training them and holding them in the district is another matter. This is a serious obstacle to perfecting the district representative plan. But it doesn't prevent making the most of the personal and repeated contacts as a company step toward the customers.

With the districts laid out, the men placed and assembled into divisions under a qualified crew leader, not exceeding 10 to a crew, the gesture in good will offer is under way. And here is our representative speaking:

"Good morning. I am Mr. Smith from the Pacific Gas and Electric Company (present card). Are you Mrs. Brown?" *(Continued on Page 64)*

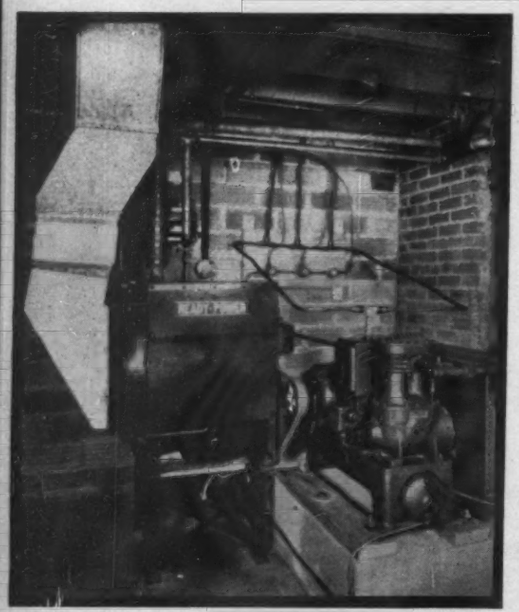


FIG. 1. Four cylinder Continental motor, adapted by Ready Power Company of Detroit, applied to a grocery store installation. This engine provides smoother, quieter operation and allows for generation. Note duct carrying heat from engine to outside or to floor register.

BUILDING LOAD

By R. S. WENNER

The Ohio Fuel Gas Company*

THE subject of "Gas Engines for Power Generation" falls far short of completely suggesting the scope of the idea which I want to describe and discuss. I want to offer to you a plan for load building, with gas engines, which we have developed in Toledo, have put to trial, and enthusiastically recommend for your consideration.

Power generation happens to be only one phase of this plan, which really is a combination of several things—none of which by itself is new or novel or offers sufficient advantages to particularly recommend it. Yet collectively, in this combination, the plan is new, and offers advantages combined with simplicity, which give promise of its becoming the panacea for overcoming the problems encountered in attempting to build a substantial gas power load.

In the State of Ohio we have long recognized the value of gas engine load if obtainable at fair rates. By this I mean rates which will sustain the form value of our product and not depreciate it, for this purpose and others, to the comparative B.t.u. level of less refined fuels. The figures and table accompanying this discussion show typical commercial applications of power units and comparative energy consumption under various conditions.

We were genuinely interested in attempting the promotion of gas engine sales before the lighter weight, higher speed engines came into popular usage. We put an honest, and we thought an intelligent, effort back of all this; yet we failed. Why? Poor salesmanship? Naturally we were reluctant to believe this. We felt no particular need to apologize for our results along other lines. We came to the conclusion that something of a fundamental nature was lacking in the existing set up; and that some brand new technique of approach must be developed for its successful accomplishment.

We have had our choice of two methods for applying gas engines. First, through complete electric generating plants and second, through selecting one particular load for direct power application. What little success we had was through direct power applications, but again we failed in the great majority of cases. Naturally we needed a high load factor application to make any showing; and the type of load left for the electric utility automatically raised the electric rates. Perhaps we planned to take away half the load, but instead of reducing the electric bill by 50 per cent. we could only reduce it by 30 per cent. We were unable to offset the effect of this resulting rate increase, due to high price brackets and load factor penalties.

Where line shafts were still used, or where one application represented practically the entire load, we had some chance; but this involved only a very restricted market, and even so, we faced limitations inherent in the equipment we had to offer.

Gas engines are accurately rated, and definitely limited as to the load they may carry. They will not carry any appreciable overload for even a short period without the danger of stalling. Consequently the size must be determined by the maximum load (no matter how slight its duration) which may reasonably be anticipated. Even though we gave consideration to only reasonably constant loads, eliminating all others, we had to accept the condition of the engine carrying less than rated load for at least 90 per cent of the operating time, thus exacting penalties in the form of lowered efficiency and higher first cost.

That these problems existed everywhere and were well recognized, is borne out by the developments of the past year which were designed to overcome, in part, some of these more serious objections. We now have the automatic dual motored plant for power generation, offering higher economy for varying loads and insurance against complete shut down. We also have the completely automatic deluxe power units, offering in flexibility and other factors, usually the equivalent, and in some cases more, than the electric motor. These are splendid contributions as far as they go. But they solve only one or more difficulties, still leaving a major problem.

Since our success, if such slight progress may be so termed, was with individual direct power applications, we were greatly impressed with the automatic deluxe power unit. It revived our interest in gas engines as an adjunct for load building. We felt that the manufacturer, for this pioneering venture, deserved encouragement and support; and we set about to find an application for one of these units, preferably with a year-round refrigeration load. The auto-

* Presented before the American Gas Association National Conference on Industrial Gas Sales, Chicago, Ill., June 8-9, 1937.

With Gas Engines for Power Generation

matic starting, the possibility of modulated speed control, its smooth, cool and quiet operation all appealed to us. Yet in working out its application we were made conscious of the fact that we still faced major difficulties.

Our most likely prospect for this trial was a small ice cream manufacturer. His equipment consisted of two ammonia compressors; one of 5-ton capacity, manually controlled, belt driven by a 10-hp. induction motor; and the other 4-ton, automatically operated, belt driven by a 7½-hp. motor. He also had an ice cream making machine with a 3-hp. motor. The refrigerating load consisted of this ice cream making machine, operated intermittently, and a large refrigerator or hardening room which is kept at a temperature of zero or below. Depending on temperature conditions and seasonal volume of business, operating one or the other of the compressors would be sufficient, but in mid-summer both machines were operated.

Naturally the customer was concerned about the reliability of the engine. In his business a breakdown of power facilities would soon offset any possible savings. We still faced the old bug-a-boo of questioned reliability, and the reluctance to trade power dependability for promised savings.

Further than this, his load was scattered. If we took just a portion of it—say the larger compressor—we still left a considerable electric load to be paid for at a higher unit rate. The consequent reduced savings would not warrant this investment. Neither he nor we wanted to revert back to line shafts as an alternative.

We were worrying about how best to replace an induction motor with a gas engine, and still avoid the dilemmas I have described; and the answer is just as simple as this. Don't replace the motor. Leave everything exactly as you find it. Simply hook up your gas engine to it and let everything run in unison, with your gas engine acting as the foreman of the job and in command of the situation.

Briefly here is the underlying theory. A gas engine and a mechanical load are both connected to an induction motor or what may better be termed an induction machine, since only at certain speeds is its behavior that of a motor. For any such induction machine there is what is known as its synchronous speed. When it operates as a motor it revolves at a speed slightly less than this synchronous speed. The more heavily loaded as a motor, the slower its operating speed, although the lag seldom exceeds 10 per cent of synchronous speed for small motors or 5 per cent for large motors. If by the application of power to the motor shaft the motor is caused to rotate at its synchronous speed, it, for all practical purposes, is no longer receiving power from the supply lines. In the case described the gas engine will be driving the mechanical load through the motor as a jack shaft. The motor will be merely idling. If the speed of the system is further increased by increasing the engine speed, the induction machine will become an induction or a synchronous generator. To perform this function it is dependent upon the line voltage for excitation. The voltage and frequency which it generates are exactly the same as that of the supply line, so that it is suitable for use by any other equipment connected to the line. Even in the event that part of it should find its way back through the meter into the neighboring distribution system, it could do no harm. It is completely identical with the supply, is dependent upon it for functioning, and fails when it fails.

The focal point of this idea is in the triple combination of engine, induction machine and mechanical load. This offers many advantages which cannot be obtained by the use of any

FIG. 2. Diagrammatic sketch of simple phase installation, involving an automatic refrigeration load and auxiliary power and lights. A typical commercial installation.

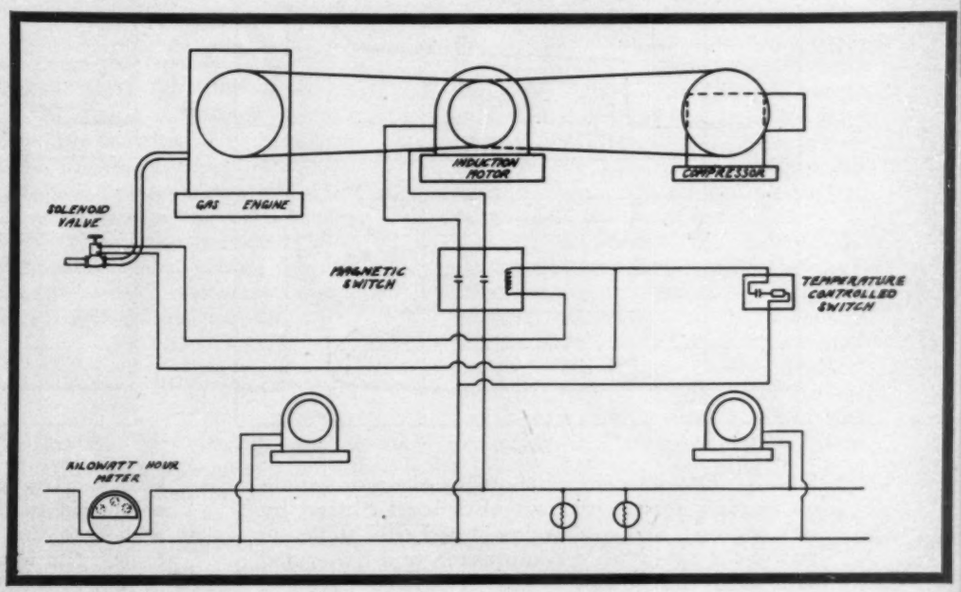


TABLE NO. 1. COMPARATIVE FIGURES SHOWING SAVINGS DUE TO A GAS ENGINE INSTALLATION IN A GROCERY STORE.

Using Electricity

Month ending May 12, 1936	Consumption—872 kw. hrs.
Connected Load 3.5 kw.—Billing Demand	.6 x 3.5 = 2.1 kw.
First 30 hrs. use of demand (63 kw. hrs.)	@ 6c = $ 3.78
Next 200 hrs. use of demand (420 kw. hrs.)	@ 4c = 16.80
Next 389 kw. hrs.	@ 2.9c = 11.28
Total Electric Bill (Avg. 3.66c kw. hr.)	$31.86
Gas Bill (minimum)	.75
Total for May 1936	$32.63

Using Gas and Electricity

Month ending May 13, 1937	Consumption—83 kw. hrs.
First 30 hrs. use of demand (63 kw. hrs.)	@ 6c = $ 3.78
Next 20 kw. hrs.	@ 4c = .80
Total Electric Bill (Avg. 5.52c/kw. hr)	$ 4.58
Gas Bill (14 M c.f.)	8.25
Total for May 1937	$12.83
Gross Savings—May 1937 over May 1936	= $19.80

Assuming identical load conditions:
872 — 83 = 789 kw. hrs. replaced by 14,000 cu. ft. or 17.7 cu. ft. per kw. hr.

two of these parts used separately, and it offers these advantages simply and cheaply. No one single advantage that may accrue to the use of any two of these is lost through this combination, and to all of these existing advantages there is added an inherent balance and economy of operation that is really remarkable.

Generation is accomplished with an induction machine more simply than by any other means. It involves nothing in the way of additional equipment to provide voltage and frequency regulation. This field has probably been overlooked because the induction generator is not self sustaining. Yet this apparent weakness is really the strongest point in favor of its use. Were we to use a synchronous alternator, we would be obliged to accept responsibility for keeping in step with the line both as to voltage and frequency. This would involve special equipment and added investment. It would further involve the expense of changing the existing motor. In case of power failure, means would have to be provided for preventing interference from our generator beyond the power company's meter. All along the line we would be faced with the argument that we were indulging in a dangerous practice and many valid objections to its use would be raised and sustained. But with the induction generator these arguments cannot be sustained. There is not the slightest possibility of interference or damage. We require only a small amount of power for the purpose of excitation and regulation, which we are willing to pay for, and expect to pay for, on the same basis as that of any other power requirement. That is, we expect to pay a charge that bears some reasonable relationship to the actual cost of supplying this service.

Through the use of this plan you can take each separate case that you may have for consideration, decide how much of the load you must take, to make for maximum return on the investment; and make your application accordingly. It allows perfectly for the flexibility, both for application and operation for which we have so long been looking. Diesel manufacturers are proud to advertise that their installations may be amortized in three years. They have built up a large business on this fact. Yet you will find that this plan will usually provide for amortization in from 12 to 18 months and at gas rates that are satisfactory.

(Continued on Page 48)

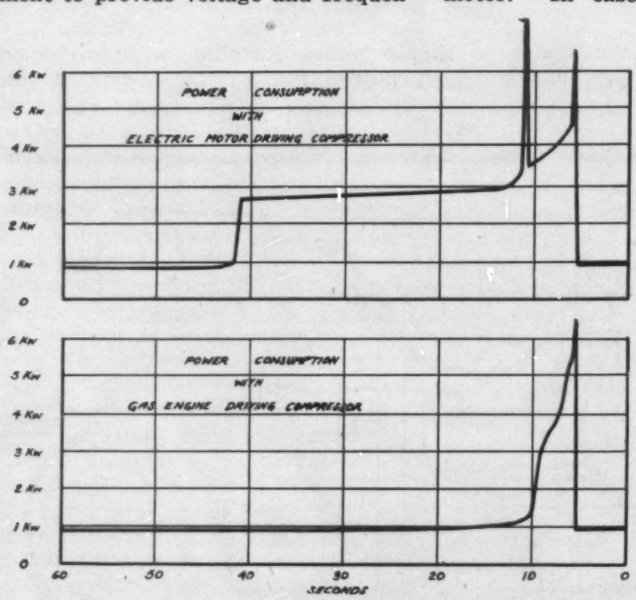


FIG. 3. Esterline charts showing effect of engine on starting surges and extent of load carried by gas engine. The engine developed only sufficient power for operating a compressor, and generated practically no power.

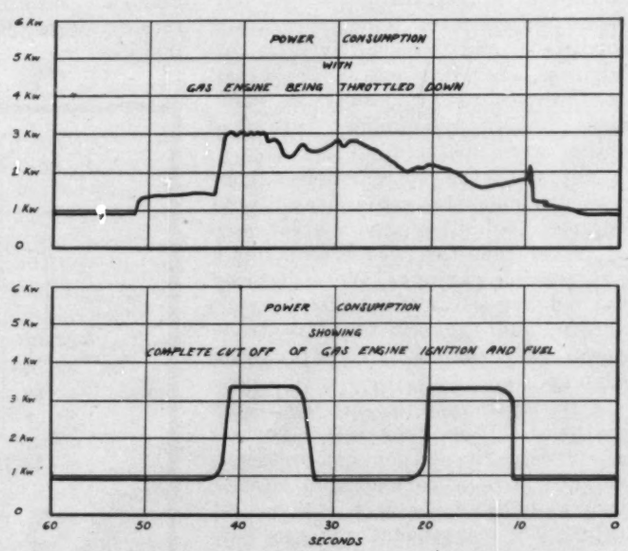


FIG. 4. The upper esterline chart shows the fuel consumption with the gas engine throttled down, with both the engine and the motor sharing the load. The lower chart shows the effect of failure of fuel or ignition in the gas engine.

Tell 'em—Sell 'em

The Indiana Association Continues Its Successful Appliance Campaign

THIS is not a new story, nor one describing events that will mark new annals in the history of the American gas industry. There are no magic formulas to disclose.

Efforts of the Indiana Gas Association to meet strong competition and to bring to the attention of Hoosier housewives the advantages of gas can be summed up in two words. They are "Co-operation" and "Advertising."

Co-operative advertising is not new. Many industries have tried the idea, with the success of the effort in almost direct proportion to the continuation of the co-operation and the persistence of the advertising. Oranges and orange juice, and the telegraph delivery of flowers, to cite two outstanding examples of co-operative advertising, still are reaping the popularity created by campaigns started some years ago, and continued to the present time.

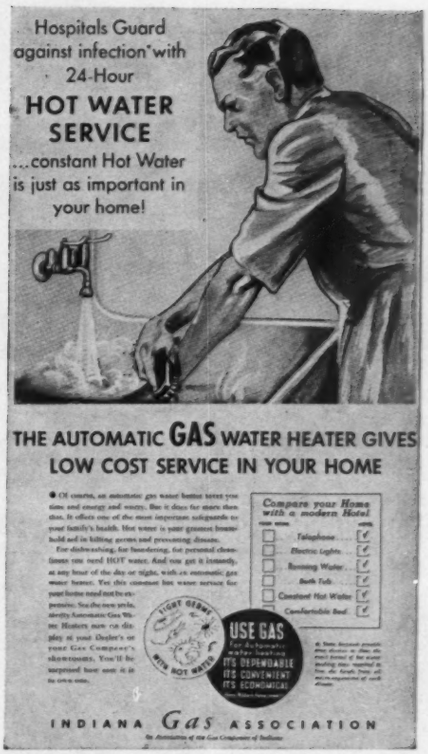
On the other hand, "Have You Had Your Iron Today" is a phrase that is a distant memory and one that started to fade when raisin growers ceased to advertise. These groups followed no magic formula. They simply determined the obvious, fundamental principles which their advertising should follow, agreed to carry out these policies, and then told the public about the product or service they had to sell.

When some of them stopped telling, they stopped selling.

Ever since 1929, the members of the Indiana Gas Association, which consists of operating gas companies in the state, had been feeling the effects of electric competition. Some of the members were combination companies, offering both gas and electric service in a large part of their territory. Each succeeding year brought a decrease in M c.f. sendout and a loss of customers. Part of the loss, naturally, was caused by income curtailment due to unemployment, falling back on old-fashioned equipment and fuel, and a deliberate effort to conserve on the amount of gas used. As conditions improved, however, the combination companies were able, from their own records, to see that the electric end was improving more rapidly.

The directors of the Indiana Gas Association were in an excellent position to know what was going on, and to realize the necessity for action. A Commercial Committee was appointed and instructed to handle the problem. There were to be no reports or recommendations or "viewing with alarm." The directors wanted and demanded—Action with a capital A.

One thing that had to be corrected immediately, the committee agreed, was the impression that gas was old-fashioned and that the modern housewife had to buy an electric range if she wanted the advantages of up-to-date equipment.



A sixty-inch newspaper advertisement devoted to gas heater promotion.

The committee decided upon an institutional advertising campaign, which would appear over the signature of the Indiana Gas Association, and which would be separate and distinct from the advertising programs of the individual companies. Because the electric industry was concentrating on cooking, and because the gas industry ranks cooking as a basic load, it was decided to devote the campaign to selling the Indiana housewives on the fact that the modern gas range can do anything that an electric range can—and more besides.

Bozell & Jacobs, the advertising agency selected to prepare the campaign, made an exhaustive study of markets. It was found that company territory, markets, and newspaper coverage fell in practically identical spots. Thus, one of the major stumbling blocks in co-operative effort was removed. No company "gave more than it got" and no company was "carried" by the others.

The space to be run in each paper was determined at 60 inches, large

(Continued on Page 36)

SINCE FEBRUARY, 1936, the Indiana Gas Association has been conducting a co-operative gas range advertising campaign for the benefit of its member companies. The campaign has been under the direction of C. V. Sorenson, Public Service Co. of Indiana, chairman of the Commercial Committee of the Association, working in conjunction with Bozell and Jacobs, advertising agency. As a result of the campaign's outstanding success, the Indiana Gas Association at the 1937 convention voted to include the promotion of refrigeration and water heating. L. C. Heavner, Northern Indiana Public Service Co., was 1936-37 president of the Indiana Gas Association. H. Carl Wolf, president, Central Indiana Gas Co., Muncie, was elected president at the convention last April. The article herewith published is an appraisal of the Association's advertising activities.—Editor.

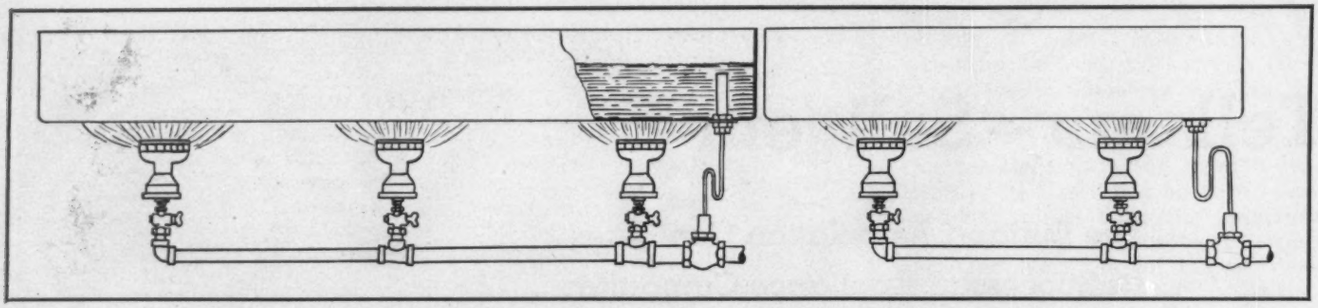


FIG. 1. Test steam table, 20 feet long by 22 inches wide, underfired with five mushroom type burners.

Steam Tables and Coffee Urns In Air-Conditioned Restaurants

By J. ROBERT DELANEY Supervisor of the Hotel and Restaurant Division of The Union Gas & Electric Company, Cincinnati, Ohio

THIS article is written hoping to shed some light on one particular heat source and its relationship to summer air conditioning in cafeterias and small restaurant dining rooms. It is not intended as an exact or comprehensive study as the figures are estimates based on practical experience.

J. R. DELANEY

Many cafeterias and restaurants in the United States are using some form of summer conditioning equipment. Thousands of others are considering installations and practically all have talked about it at some time. They all know, from others' experience, that the normal summer slump in the food purveying business can largely be eliminated by properly cooled and dehumidified air in their dining rooms.

The largest deterrent to immediate installations in the majority of these prospects is the initial cost of installation. Secondary to the initial cost is the operating cost, which, somehow or other, is never an obstacle to Mr. American Restaurateur, providing he can see a resultant beneficial increase in his sales.

Numerous times in the past several years I have been asked by summer conditioning salesmen regarding the heat input of various gas-fired counter equipment used in restaurants. Without much thought this information was given, and I suppose used in calculating the refrigeration requirements.

Beyond this point I did not bother to go until last week. As I was eating luncheon in a small suburban restaurant, after having instructed some of the counter help on the proper operation of a gas fired toaster, the owner sat down opposite me and in the course of our talk I asked when he was going to install summer air conditioning equipment. He replied that he had given it plenty of thought, but that the initial cost had stood in the way up to the present time, but that cost or no cost, he was going to install it this summer. He then cited the success of other local places using conditioned air and forecast the fact that a few years hence no commercial establishment will succeed unless cooling and dehumidifying equipment was part of its business.

Before leaving this restaurant, I advised the owner to give serious consideration toward applying thermostatic controls on his two gas-fired steam tables and three gas heated coffee urns, all of which are located in the dining room. The application of these controls would, I told him, lower his gas consumption 25 to 35 per cent and thereby reduce the heat input so that his future refrigeration and conditioning plant could be applied usefully and not in part to offset excess heat caused by manually controlling the heat input.

After leaving the restaurant it occurred to me that in calculating the heat input of coffee urns and steam tables I had completely lost sight of the fact that some of this sensible heat input was changed into latent heat which is much more difficult to remove by ordinary means from air than is sensible heat.

I determined to find out how much evaporation would take place under various steam table operating temperatures and, much to my surprise, could find very little information on evaporation under 212° F.

The only material I could find on the evaporation of water from open tanks at temperatures below 212° F. was written by Professor Alonzo P. Kratz in 1931 at the University of Illinois, and his tests were concerned with water pans used in warm air furnaces as humidifiers for residential purposes. Therefore, the temperatures were not comparable to those of steam tables and coffee urns.

A week was spent checking as closely as possible the actual evaporation from gas heated steam tables. Following this, an experiment was made with an open pan of water, the temperature of which was closely controlled.

For practical purposes, suppose a steam table 10 feet long and 3 feet wide (depth does not count) is heated to 180° F., which is advisedly the proper temperature for steam tables. How much water will evaporate from the foods and water in the table at this temperature? How much at 190° F., at 200° F., at 210° F.

(Continued on Page 32)

GAS CAMERA

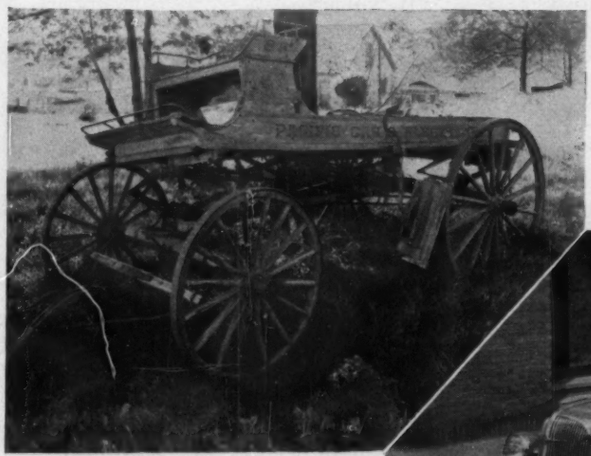
PICKING THE prizewinners in the Better Copy Contest conducted by the Public Utilities Advertising Association. At the table (foreground, left to right) are G. W. Philip, Kings County Lighting Co.; Clayton Cassidy, The Peoples Gas Light & Coke Co.; E. N. Pope, Carolina Power & Light Co. Back of them, left to right, are Don Parry, Wilson & Haight, Inc.; Henry Obermeyer and Howard Weeks, Consolidated Edison Co. of New York; J. V. Macdonald, Edison Electric Illuminating Co. of Boston, and Frank Gardner, Commonwealth Edison Co. (Story on page 70).

A.G.A. photo.

TALKING IT over between sessions of the Joint Conference of the Production and Chemical Committees, American Gas Association, in New York City, are Eric Larson, Long Island Lighting Co., Charles F. Turner, The East Ohio Gas Co., and George E. Ludwig, Grand Rapids Gas Light Co.

E. E. STOVALL (left) Lone Star Gas Co., retiring chairman of Southwestern Gas Measurement Short Course Committee, and (below) GILBERT ESTILL, Oklahoma Natural Gas Co., incoming chairman.

THE 73RD STREET gas holder of The Peoples Gas Light & Coke Co., Chicago, directs airplane pilots to the municipal airport. At night the holder is marked by four tiers of ruby and white lights and floodlights which illuminate the arrow. The holder is the world's largest.



THEN . . .

In this two horsepower wagon, service men clattered in the old days to make installations and repairs for Pacific Gas and Electric Co., serving San Francisco territory.

. . . AND NOW

Today P. G. and E. send its service men out in modern automobiles like this. Last year the company's 2100 motor vehicles traveled more than 18,000,000 miles.

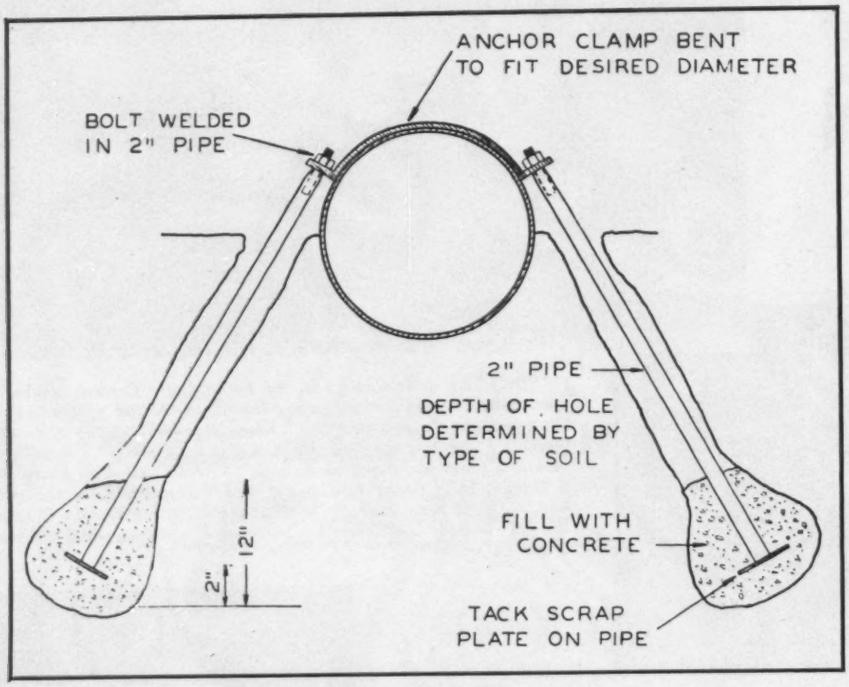


FIG. 1. Anchor Clamp

J. C. REINBOLD, Panhandle Eastern Pipe Line Co., Kansas City, Mo.; addressing Natural Gas Department Convention, American Gas Association, Kansas City, Mo., May 10-14, 1937.—(Abstract by G A S).

MAINTAINING HIGH EFFICIENCIES IN GAS PIPE LINE SYSTEMS

THERE prevail on all pipe-line systems certain inherent problems of operation and maintenance that are common to all and it is with some of these features that this paper deals.

J. C. REINBOLD

Efficiency demands that operating crews be entirely familiar with their respective section of line and its surroundings. Accurate detailed construction maps with right of way information, specifications of pipe, fittings and materials, piping layouts of compressing, measuring and regulating stations, by-passes, river crossings and other information of like nature are essential. Not only is a complete knowledge of the physical aspects of the property itself important, but familiarity with surroundings ranks equally with it. Pertinent information concerning highways, roads, lanes and cow paths; rivers, creeks, dry washes and high water marks; communication systems, supply stores, machine shops, railroad and truck line facilities and their schedules; personal acquaintance with farmers, railroad section foremen, highway and county engineers and other pipe-line and utility employees in the immediate vicinity; these must be common knowledge with company personnel if maximum efficiency is to be maintained at all times.

Line patrolling is the link to efficient operations. Much depends upon an adequate line patrol and the detailed reporting of findings, inasmuch as many emergencies are forestalled through immediate attention to conditions disclosed.

The following list of general instructions to line patrolmen gives an idea of the broadness of the line patrol field and the use to which it may be put in serving as a source of operating information:

1. Report all leaks regardless of size.
2. Tighten all leaking stuffing boxes on gates and report any that need repacking. Make all other minor repairs possible and show these activities on the report.
3. Report all washes in the immediate vicinity of the line. Cover widening or changing of any old washes that have not yet become a hazard as well as new washes.
4. Report any new surveys relating to proposed pipe line, electric line, telephone line, drainage ditch and highway construction, tiling installations, widening projects or changes in stream courses.
5. Report any building construction on or near the pipe line right of way.
6. Report drilling well locations.
7. Report any pond or dam projects that may cause inundation of line or right of way.
8. Report rainfall, snow, weather and road conditions.
9. Report detours, bridge washouts or other similar conditions.
10. Report new high water levels.
11. Report major movement of live

stock to or from pastures crossed by the line.

12. Report any change from pasture to cultivated land on right of way.

13. Report new fencing projects across right of way as well as fence sections or gates that need repair.

14. Report sections of right of way that should be sowed in grass seed.

15. Report defective tiling.

16. Report any other condition that may be helpful in the operation of the line or that may place it in jeopardy if same is not attended to.

17. Forward report daily and telephone or wire concerning any condition that may appear to be at all hazardous.

The marking of "pluses" at all available points, particularly on road markers, greatly facilitates accurate reporting of exact locations of points needing attention.

It is well to augment routine patrol immediately after an exceptionally heavy rain by distributing maintenance and operating crews at advantageous points along the line, thereby covering the area of rainfall as rapidly as possible.

Backfill cannot be considered only as an excess of dirt that must be replaced in the line ditch or otherwise disposed of. Its most important function is to provide weight on the line and the protection it offers against upward movement of the pipe necessitates care in its proper maintenance that should not be overlooked in the operation of large diameter high pressure lines.

At certain points it is necessary to augment normal backfill weight with anchors (Fig. 1) and in sections of country where "sand-blows" are common, the use of "snow" fences has proved helpful in maintaining backfill.

The principal cause of backfill movement or sloughing is surface water. Protection against this hazard is essential, and can be obtained by placement of spillways and wing walls.

In certain soils sun bake of backfill crust will enable it to support considerable weight, yet underneath a space large enough for a man to crawl through may exist between the pipe and the bottom of the backfill. Small holes in the backfill cannot be overlooked as they may serve as entrances for water to existing undermines. Bar tests and inspection holes at suspected places often uncover such conditions before the occurrence of backfill breakdown.

Electric welding on lines under pressure has eliminated many major shut-outs with their consequent interruption of service and loss of gas. It has perhaps done as much toward maintaining high efficiencies in pipe lines as any other comparatively recent development. It completely and finally takes care of many leak repairs, line connections and reinforcements that formerly were accomplished through temporary means while awaiting opportune times for shut-outs in which to make them permanent.

Electric welding under such conditions is generally position welding. One-eighth and five-thirty-seconds inch electrodes have been found satisfactory for this service. The rod is used with reversed polarity and under normal conditions with amperage set at 100 and voltage 25 to 30.

Emergency repair materials must be available and handily located.

In addition to material located at pipe racks along the right-of-way, emergency boxes for welding rod, gaskets, rubbers and other necessary smaller items, as well as extra pipe and large fittings are usually kept intact and ready to load at division and district warehouses and compressing stations.

Periodic coating inspections are usually carried on during the summer months.

Main line gate valves must be greased and opened and closed periodically to test their operating condition. Gear covers and gears are inspected and cleaned and locks checked for damage and "freezing."

Close watch must be kept on line fluid and accurate reports made of volume removed from each drip, tap or syphon. An abnormal increase or decrease in fluid volumes without known cause should be thoroughly investigated. The appearance of dust often points to coming trouble. Fig. 2 is presented to show a type of portable syphon which has proved extremely economical and successful in removing fluid trapped in sags or in other locations not drained by line drips. Portable syphons have practically eliminated the necessity of the bottom tap and have saved many dollars and troublesome shut-outs which otherwise would have been required for drip installations.

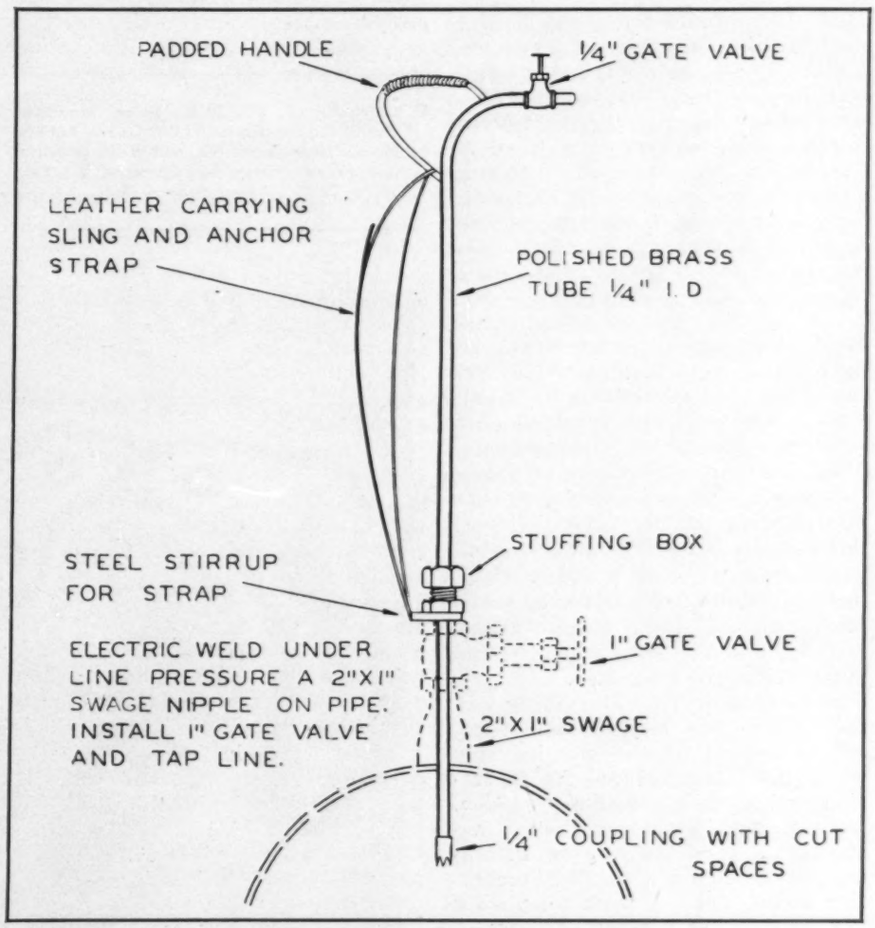

PADDED HANDLE
1/4" GATE VALVE
LEATHER CARRYING SLING AND ANCHOR STRAP
POLISHED BRASS TUBE 1/4" I. D
STUFFING BOX
STEEL STIRRUP FOR STRAP
ELECTRIC WELD UNDER LINE PRESSURE A 2"X1" SWAGE NIPPLE ON PIPE. INSTALL 1" GATE VALVE AND TAP LINE.
1" GATE VALVE
2"X1" SWAGE
1/4" COUPLING WITH CUT SPACES

FIG. 2. The portable siphon is designed for removing fluid from lines at points where no drip is located.

HOME SERVICE and the SALES MANAGER

THIS discourse concerns three principal groups of gas company officials—general managers, sales managers and home service directors.

There are two thoughts in relation to home service which are fundamental:

B. T. FRANCK

1. Let us assume that it costs the company $50,000 a year to run its home service department. This means, in order to justify its existence, the department must account for the retention, if not additional sale, of a quarter of a million cubic feet of gas annually.

2. For the sake of this discussion, separate home service from the sales department, consider it an entity by itself. Discontinue the sales department in this competitive era, and the decline of business would become evident immediately. But, cut out the home service department, and it probably would be a very long time, if ever, before any critical effect upon a company's well-being would be noted. This circumstance places home service in a vulnerable position, as its sole function obliges it to contribute "plus values."

Let no one construe these statements as an attempt to depreciate the value of the right kind of home service. Like good advertising or a well trained sales personnel, it rates highly as an important phase of an adequate, comprehensive promotional program.

To begin with, home service was not tainted with commercialism. It was the purpose of home service to *teach* women how easy it is, how economical it is, to prepare fine foods, even fancy foods, at home. And it was not a sales activity, and the sales manager was not particularly interested.

Until 1929 or 1930 everything was fine. Then, two major changes occurred outside of the gas industry which upset the picture—the depression and electric range competition.

As electric range advertising evidenced its persistency, grew in volume, it gradually compelled recognition from even the most complacent gas man. Almost simultaneously, a movement began in the gas industry, to coordinate and consolidate the activities of home service departments with those of sales departments.

Among the first to inject new life into platform work were the gas range manufacturers. They offered men like Paul Dorsey and Carl Sorby, and, more recently, Frank Decatur White.

The first time I saw Dorsey in action was a little over a year ago. I went to Philadelphia to see and hear him perform. He showed his audience what one can really do with a modern gas range. Among other dramatic demonstrations, he broiled a steak right in the flame of the broiler, and invited people to come up and sample it, and prove to themselves that the gas could not be tasted.

I went away full of enthusiasm, and as soon as it could be arranged, Dorsey presented his program in the home service auditorium of one of our properties.

● **BERNARD T. FRANCK, Sales Manager, Grand Rapids Gas Light Co., Grand Rapids, Mich.; addressing the Mid-West Regional Gas Sales Conference, Chicago, Ill., Feb. 18-20, 1937.—(Abstract by G A S).**

Dorsey put on a better show than he did in Philadelphia. When it was all over, I eagerly asked a home service director how she liked it. "Well," she replied, "he didn't season a single thing." That wasn't the answer I expected.

Not long ago, I attended a meeting at which a number of home service representatives from various parts of the country were present. Demonstrations involving better showmanship, and placing dramatic emphasis on the appliance occupied a large part of the discussion. One home service director remarked contemptuously, "Those things may be all right, but the women don't learn anything." I question that.

Time and again, Home Service reports are submitted to the management which read like this: "During the year we held 100 classes with a total attendance of 15,000; our department's field staff made 3000 home calls, etc., etc.; altogether there were 'umpty' thousand contacts." And the general manager looks at the home service report, sharpens his pencil and divides the expense by the number of contacts—the answer is $ .0000001 per contact—and he says, "Swell job." Swell job, rats!

I would rather have half that much of everything, and twice the expense, if I had assurance that in each contact we availed ourselves of the opportunity to take a saucepan, place a little water in it, bring the water to a boil, turn the burner down to simmer, wrap a towel around the utensil and let the boiling operation continue for several minutes, then remove the towel and show that it is not burned. What better proof do you want; what better proof can you get that gas cookery is cool cookery? That's what Carl Sorby does. This is but one example of the many things which are available today which can be done effectively to place dramatic emphasis on the appliance.

The question of changed conditions is not a matter of conjecture. The change has taken place; it is here, and it is manifest. Where once it was necessary to teach our customers only about better cooking, now we profit but little by such teachings. Ten years ago we were the only ones doing it and it was a unique service. Today all of our efforts must be directed toward establishing public acceptance of the idea that the best cooking can be obtained only with gas and the modern gas range.

To further these accomplishments, it is recommended that the home service department be made an integral part of the sales department. There may be a very special case, occasionally, where such treatment is not advisable. In that event, the management should make it a point to exercise sufficient supervision to assure itself that the coordination of activities between the home service department and the sales department is continuous and complete.

To protect myself, and in all fairness to everyone concerned in the properties in which I take an active interest, every important sales meeting involving the introduction of new appliances, new models, campaigns or policies will be attended by home service personnel, so that, at all times, home service will be informed as to what the sales department is doing and what it is trying to do.

KITCHEN PLANNING

● **HARRY SWENSON, Director, Kitchen & Basement Planning Bureau, The Peoples Gas Light and Coke Co., Chicago, Ill., and Home Modernization Counsellor, American Gas Association; addressing the Mid-West Regional Gas Sales Conference, American Gas Association, Palmer House, Chicago, February 18-20, 1937.—(Abstract by G A S).**

HOME service seems a little timid about approaching the subject of kitchen planning. Why? The answer probably is either that home service does not feel competent to do it or it simply does not want to do it. But if it requires a too elaborate set-up to conduct a bona-fide kitchen planning service, why not approach this profitable and interesting field by way of a Kitchen Advisory Bureau or Kitchen Clinic.

HARRY SWENSON

To begin such a service is simple and requires almost no expenditure, but it requires that you:

1. Decide what makes a logical kitchen arrangement. Think of the home kitchen less as a chemical laboratory for food preparation and more as a happy place for work and living.

2. Gather and study kitchen plans, photographs and illustrations.

3. Establish a complete and up-to-date file on all angles of kitchen planning.

4. Obtain catalogs, brochures, and pamphlets from manufacturers of kitchen equipment, lighting fixtures, flooring, etc.

5. Gather samples and learn the talking points on wall coverings, tiles, flooring, paints.

6. Get well acquainted with all gas appliances. Think of them, not as individual pieces, but as component parts of the kitchen.

7. Learn a little about ordinary construction rules, venting and ventilation requirements. (See A. G. A. publication: "Modern Kitchens and Basements.")

8. Learn something of color theory and its application. Think of at least three good color schemes applicable to the kitchen. Eighty per cent of questions will concern color and decoration.

9. Know the kitchen merchandise offered by local stores, dealers, and manufacturers; contact a reliable contractor to whom you can refer prospects.

10. Become accustomed to handling a pencil for simple sketching.

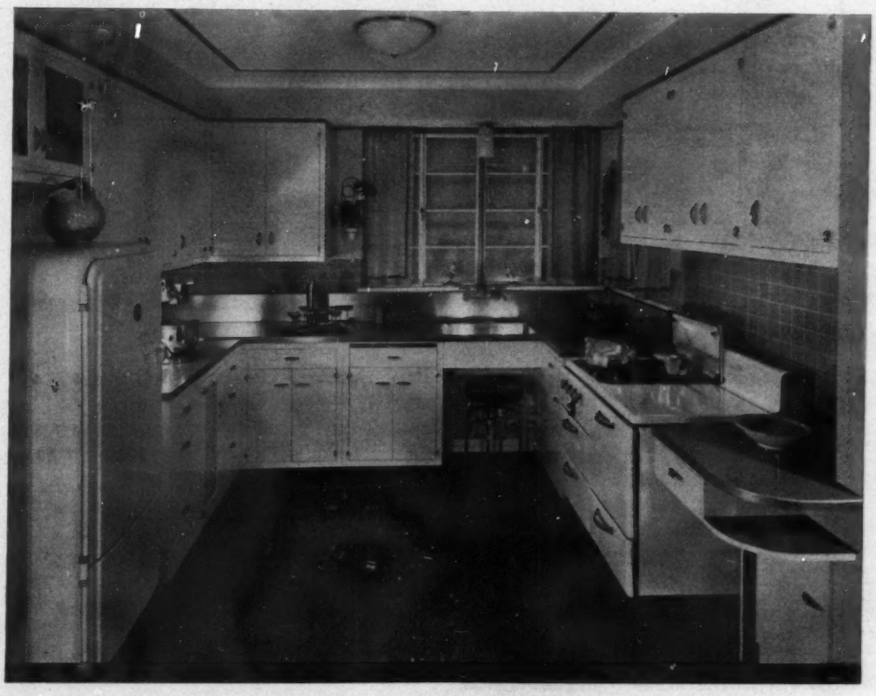
11. Work up a prospect file.

Then, plan a "Kitchen Clinic Demonstration." Have all materials, samples, and so forth, on display. Invite questions and go to it with a heart. Talk not only of gas appliances, step-saving, and efficiency, but speak of better living, pride in a better home, time for pleasure, glamour to everyday tasks, beauty to be enjoyed every day in the year. In short, speak of the modern gas kitchen as a place for happy living.

Naturally the kitchen should be designed both for efficient operation and for beauty; and it should be as attractive as its functional purpose permits. The old-fashioned quality of beauty is not at all incompatible with modern ideas of function and efficiency—rather, an alliance of the three is feasible.

With better designed and more handsome kitchen equipment, the possibilities of the kitchen as a place for decoration unfolds. In this it equals the living room; colors can be as exciting or as refined as elsewhere and decorative touches, if consistent with the general scheme, can be as interesting as any in the other rooms of the home. Imagination and ingenuity can have a freer sway, for while the homemaker has to share the rest of the house with others, the kitchen is her own. She may be as individual as she likes, but let all plans be built on logic and sense, remembering that the kitchen is primarily a room for work.

"A place for everything and everything in its place" is the text of kitchen planning. Harmony and reason for being should direct the placing of every unit and detail. The kitchen should fit the family it



● **A U-shape kitchen, showing efficient arrangement of the gas range and refrigerator, sink, and work space.**

serves; habits and circumstances should be taken into consideration; nothing should be haphazard or indefinite.

Of prime importance on all counts is the location of the three vital units: the gas range, the sink, and the automatic refrigerator. All activity revolves around these three units. A desirable arrangement might have, in a u-shape—the Electrolux refrigerator conveniently close to the service door; then a special worktop; next, as the cross-piece of the U, a large sink with integral worktop; and to the right of it the gas range. All operating activity is confined to one end of the room; needless steps are eliminated with a compact arrangement of work centers. It is well to concentrate all work within a reasonable space to prevent fatigue, but do not cramp, for cramping is more annoying than a few extra steps. The sink is the main work bench; let the sink be easy of access, uncluttered, and ready for work always.

Important but frequently overlooked is the need for adequate and rightly located work-tables or counters. In this U-shaped kitchen there is a worktop of hard well-seasoned wood so that mixing, cutting, rolling, and slicing is done on a surface suited to the purpose. A good-sized bread-board may do instead, but it is never quite handy and so we are likely to cheat a bit and cut on hard surfaces ill suited, to the detriment of the finish. The worktop, located next to the Electrolux, is supported by a base cabinet, yet has ample space for comfortable sitting. Above it hangs a wall cabinet for housing supplies and dishes, and so all preparatory motions of meal preparation can take place here. Here, too, is located the incinerator chute, inviting easy and frequent disposal of debris. A spice rack is fixed in a corner.

Sink Belongs Under Window

The sink is placed, as it logically should be, under the window, with well divided cabinets below. It is advisable to have as large a sink as conditions and space allow.

An eating corner or breakfast nook can easily be incorporated in the kitchen plan. It earns its place many times over both as an eating space and as the office of the kitchen. Here should be located the recipe boxes, cookbooks, drawers for bills, the telephone, and perhaps also the indispensable radio.

The location of supplies and utensils merits good planning. Food packaging as it is done today makes it possible to have on hand an ample supply of staples without the need for a capacious pantry. A roomy, automatic refrigerator stores all perishable goods. In a planned kitchen the location of each vessel is chosen. Those frequently needed at the gas range are located near it, and so on.

In the kitchen that has been described the pantry is treated a little differently from most pantries. There is no door, because a door is not easily opened with both hands full. Without a door, the pantry becomes a real part of the kitchen and it is handled decoratively and architecturally like the kitchen. There are narrow shelves to accommodate the current supply of canned goods, drawers for linen and cutlery, cabinets for china and glass, cabinets for utensils, a cleaning closet and a place for vegetables.

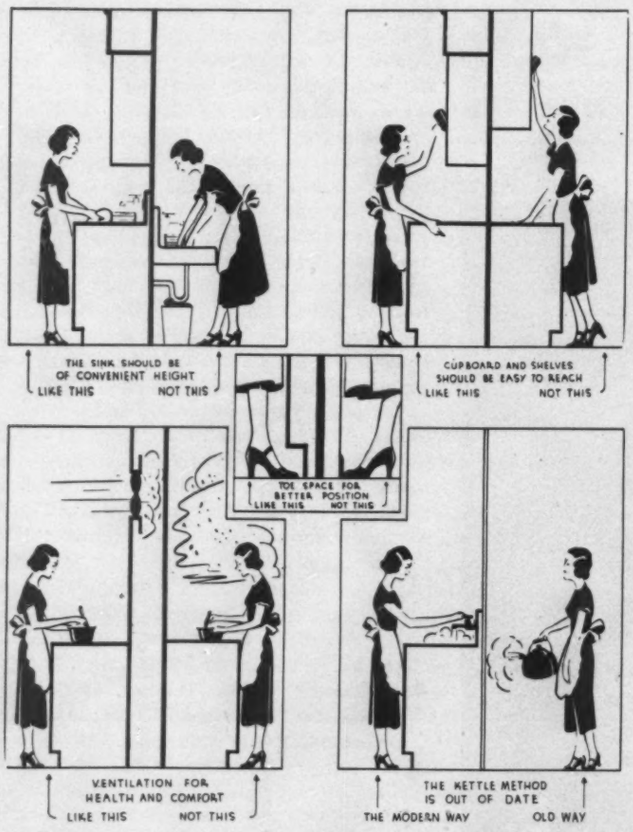
A sink or worktop placed too low is a frequent cause of fatigue. Most women agree that 36 inches is a convenient height, but the height is adjustable.

For those who cannot afford a mechanical dishwasher, dishwashing should be organized to be as painless as possible. A major, modern convenience is an automatic storage water heater so that the tap sheds hot water in abundance at all times.

There should be a complete set of kitchen tools at the preparatory table, another at the sink, and a few needed ones handy to the gas range.

Proper lighting and ventilation have much to do with kitchen efficiency and kitchen comfort. Fans and ducts can be installed at comparatively little expense and pay great dividends in increased comfort. Cooking odors should be conducted out of nasal reach as quickly as possible. Sufficient and well placed lighting is important enough to deserve emphasis. There should be a central source of adequate wattage, with auxiliary light where needed. Care should be taken that neither shadows nor glare annoy.

With the main units located on the plan it is time to think of the decorative aspect. Your kitchen should be light, airy, cheerful, so that an impression of friendliness and orderliness greets the eye. Remember that the gas range, the sink, and the Electrolux are large pieces to be lived with for a long time; these should be of good design and in simple colors. There is ample chance for color work in the other units, the walls, the floor, curtains and accessories.



Kitchen comfort depends upon little points as well as upon the fundamentals, such as the placement of the working units—the range, sink, and refrigerator. Illustrated here are some essential factors to consider in planning both new and remodeled kitchens.

● **C. D. ROBISON, operating engineer, Metropolitan Utilities District of Omaha, Neb.; in paper entitled "Changes Occurring in a Distribution System as a Result of Changes in the Characteristics of the Gas Supplied," to American Gas Association Fourteenth Annual Distribution Conference, Washington, D. C., April 12 to 14, 1937.—(Abstract by GAS).**

EFFECT OF GAS CHANGES ON A DISTRIBUTION SYSTEM

FOR many years prior to December, 1934, a standard carbureted water gas had been distributed in Omaha, but subsequent to that date the gas supplied has been a blue water gas enriched with approximately 40 per cent of natural gas.

Any changes in the characteristics of gas being distributed, even a minor one, such as is caused by the changing over of a district from a direct supply at low pressure to a supply through a transmission main, up to a major change in which from 40 to 100 per cent of natural gas is used, are accompanied by changes in the condition of the distribution system which affect the condition of the bell and spigot joints, and the use of customers' appliances, and the gas industry should have some method of evaluating these changes.

It is important that gas engineers know the relative humidity, the minimum and maximum quantities of condensable oils, and the maximum quantities of vapor phase gums and dust that can be permitted in the gas and still give reasonably good service.

In discussing this subject, it was suggested that considerable data could be obtained by the use of tar cameras and, after considerable investigation, 11 testing stations were installed, scattered throughout the distribution system, at which determinations are made each month as to the relative humidity of the gas and the quantities of condensable oils, gum and ash in the gas. A description of these stations and the method of their operation is as follows:

Fig. 1 is a diagram sketch of the installation. The psychrometer tube used is similar to that described and shown on Page 517 of the first edition of "The Gas Engineers' Handbook" published by the McGraw-Hill Co.

The tar camera for the test filters should always be placed before the meter and a gas cock between the tar camera and the psychrometer tee marked "C" on the figure.

It has been found advisable to have the union "D" as close as possible to the tar camera.

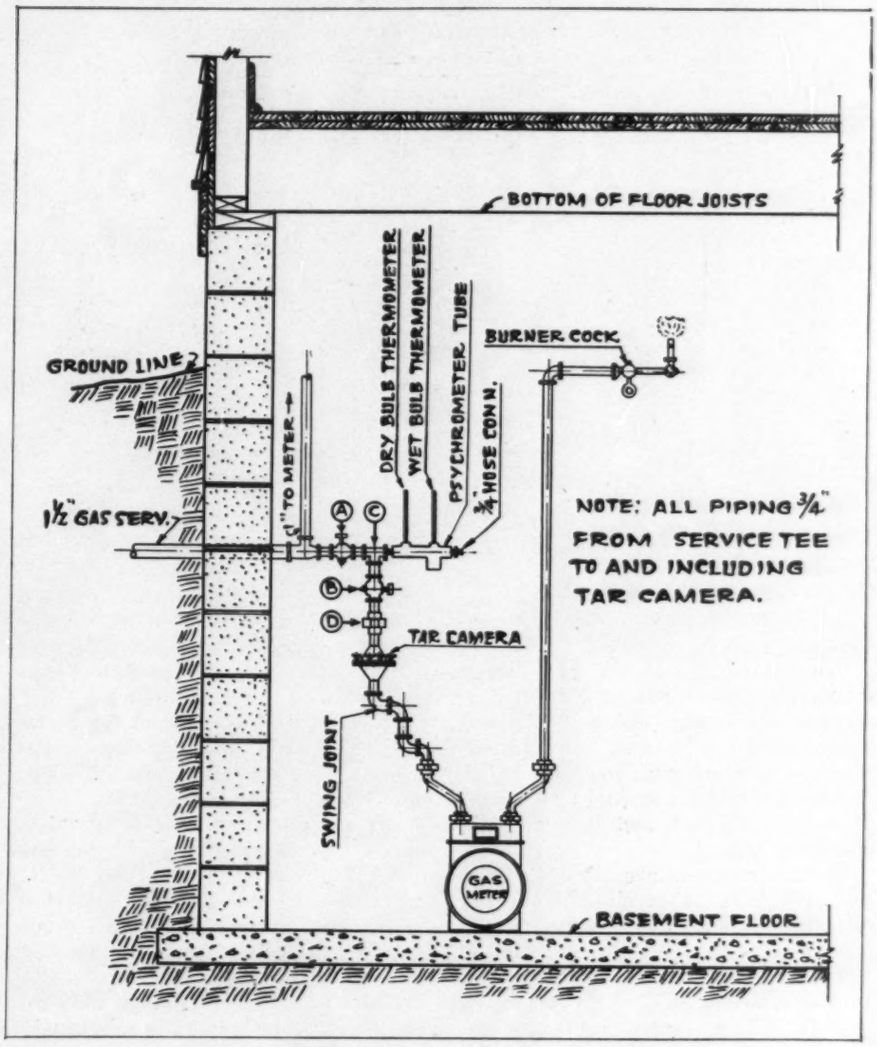


FIG. 1. Typical installation for tar camera and psychrometric tube.

The swing joint used when removing the tar camera can be either above or below the camera as is convenient.

The burner should be located in a safe place at a distance from any combustible material as the flame is allowed to burn continuously for seven or eight days.

The apparatus should be installed in the home of a company employee, or someone friendly to the company, as it is somewhat of a nuisance and some gas always escapes into the basement when relative humidity readings are taken.

It is recommended that the relative humidity readings be taken just prior to the placing of the filters in the tar cameras and that the filters be allowed to operate during the corresponding week in each month, that is, the first week, the second week, or any other week.

Two No. 40 Whatman quantitative filter papers should be placed in the tar camera and the wing nuts tightened. Care should be taken to see that screws are not stripped. It has been found that the tar camera can be tightened satisfactorily by hand.

After papers are installed, make up union "D" and turn on gas by opening gas cocks "A" and "B."

TABLE NO. 1. TYPICAL FIELD DATA OBTAINED TESTS
Test Station No. 6—6,500 Feet from Nearest Fogger (Works)

Date Filter Paper Removed	Oil in Gals. per Million Cu. Ft.	Gum in Mg. per M Cu. Ft.	Ash (Dust) in Mg. per M Cu. Ft.	Relative Humidity 82%
12-17-35	...	..	..	71%
1-31-36	0.061	2.52	..	84%
2-12-36	...	..	..	67%
3-20-36	0.034	31.20	0.89	88%
4-24-36	0.021	2.00	0.67	68%
5-28-36	0.026	2.20	0.00	
6-26-36	0.018	1.34	0.67	81%
7-31-36	0.029	1.06	1.59	79%
8-21-36	0.001	0.00	0.89	87%
8-28-36	0.044	6.05	0.45	..
9-25-36	0.023	0.85	0.85	82%
10-23-36	0.020	3.58	0.00	95%
11-27-36	0.001	0.74	1.48	83%
12-23-36	0.002	3.42	0.00	72%
2- 3-37	0.003	1.07	1.07	85%
2-19-37	0.026	0.00	0.00	70%

The burner should be adjusted to burn approximately six cu. ft. per hour.

The filters should be left for a week and then removed by turning off gas, breaking union "D," and loosening wing nuts of tar camera. The top portion can then be lifted up and the filters removed and placed at once in a 6-inch test tube and the test tube corked.

The filter papers are removed from the test tube as received from the test stations and folded twice in such a manner as to cover the material on the filter. The folded filter is formed into a compact roll.

This roll is placed into a clean, dried weighing bottle, stopper inserted; heated to 105 degrees F., stopper removed; and heated for one hour at 105 degrees F. The stopper is then replaced, the bottle cooled in a desiccator, and weighed as soon as cool. The loss is moisture.

The roll is removed from the bottle and placed into an extraction apparatus, using hexane as solvent. The loss in weight is oil.

The extraction process is repeated, using U. S. P. chloroform as the solvent. The loss is "gums."

The roll is removed to an ignited, cooled and weighed porcelain crucible. The paper is carefully ignited, then cooled in a desiccator.

When cool the crucible is weighed. The increase in weight is ash (dust).

Typical data from these tests are shown in Table No. 1.

KANSAS PIPE LINE CO. STARTS 123 MILES OF CONSTRUCTION

CONSTRUCTION of 123½ miles of pipe line has been started by Kansas Pipe Line & Gas Co. to open up new territory along the central and southern part of its Kansas system.

From Phillipsburg a 2⅜-inch O.D. line is being extended east for 15 miles to Kensington.

The branch line to Norton is being extended westward through Norcatur to Oberlin. This is 41 miles of 3-inch pipe.

The line to Holbrook is being extended 12 miles west to Cambridge. A 4½-inch pipe is being laid.

At the extreme southern end of the system, in Rush County, a 3½-inch O.D. pipe line is going west to Ness City. This line will be 43½ miles long. A lateral line, 12 miles in length, will be laid to serve Bazine, Alexander, and McCracken. Kansas Pipe Line & Gas Co. will wholesale gas in these towns to Western Power, Light & Telephone Co.

At a board meeting on June 10, Kansas Pipe Line & Gas Co. added Emmett Butler of St. Paul and Thomas Creigh of Chicago to the board of directors. The annual directors' meeting was held at Phillipsburg on June 22. L. E. Fischer is president, George W. Burton, vice-president and counsel, and E. H. Holmes, secretary and treasurer.

Effective May 15, L. L. Armstrong, formerly with the engineering department of Northern Natural Gas Corp. of Omaha, was appointed chief engineer of Kansas Pipe Line & Gas Co.

■ ■

L. O. Howell Joins A. G. A. Testing Laboratories Staff

Louis O. Howell, industrial engineer in the Southern California Gas Co., Los Angeles, severed a 10-year connection with the gas industry in Los Angeles on June 15, to join the research staff of the American Gas Association Testing Laboratories in Cleveland. Mr. Howell, a graduate of Stanford University, entered the service of Los Angeles Gas and Electric Corp. in 1927, being employed successively in the gas distribution department, the valuation department, and the sales department. In the latter department he served as an industrial gas utilization engineer, and continued in that capacity when the Los Angeles Gas and Electric Corp. was merged with the Southern California Gas Co. in May of this year. He will begin his new duties in Cleveland on the first of July, working on research problems connected with industrial utilization of gas.

L. O. HOWELL

■ ■

Two Louisiana Towns Bring Gas from Eunice

Twenty-six miles of pipe line will be laid from Eunice, La., to Mamou and Ville Platte and natural gas distribution systems built in the latter two towns, according to J. B. Lewis, mayor of Eunice, which will supply gas from the Tepetate field.

The transmission line to Ville Platte, to be built by Ville Platte, will include 8 miles of 3½-inch line and 8 miles of 4-inch line. The line to Mamou, to be built by Mamou, will have 10 miles of 3-inch pipe.

The municipal distribution system in Ville Platte will cost $60,000 and will serve approximately 300 meters. Mamou's municipal distribution system will cost $40,000 and will serve approximate-150 meters. Neither community has heretofore had gas service.

Work will start the latter part of July and will be completed in from two to three months.

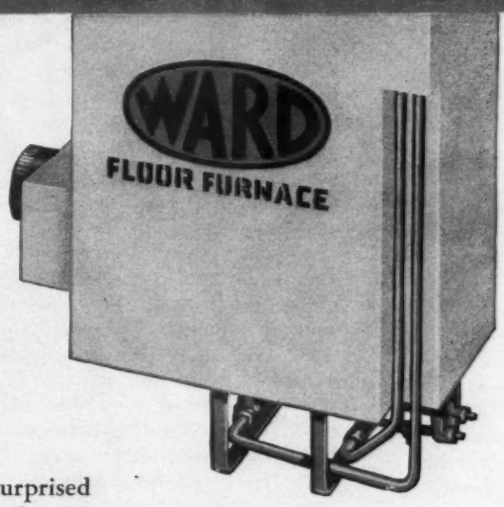
■ ■

To Build Absorption Unit

The construction of a natural gas absorption plant on a 20-acre site in Wilmington, Calif., is announced by the Inglewood Gasoline Co., through C. B. Edington, a director of the concern. Plans call for a 10,000-gallon plant to serve producing wells in nearby fields.

YOUR LOAD IS AS GOOD AS THE APPLIANCE YOU SELL... SELL THE BEST... SELL WARDS!

How many places in your community need this permanent load-building heating equipment?



Sharpen your pencil and figure that out. You'll be surprised with the number of homes, stores and one-story offices in which WARD FLOOR FURNACES will provide an ideal solution of the heating problem.

You will be pleased also with the opportunity in additional homes to develop *auxiliary heating load* in early spring and late fall by installing WARDS to take care of needs before and after regular heat is in use.

An ideal installation to make, too, because WARDS not only become a *permanent* part of the house... protecting your load from now on... but they insure *consumer satisfaction* with the economy and efficiency of gas for fuel.

A Ward Floor Furnace gives *accurately controlled winter comfort* through its exclusive Bilt-in Thermo-Control. This is a part of the furnace, automatically regulating temperature of *all* the air as it is drawn through.

A Ward gives *dependable safety* through its remarkably sensitive Automatic Pilot, and its heavy-gauge Toncan iron heating element which is hermetically-sealed and vented.

A Ward gives *greater heating efficiency* through its Cradle Circulation, which makes air movements steady and continuous, with complete changes three to six times an hour.

A Ward Floor Furnace hangs beneath the floor. Register at floor level is all that is seen. Simple, easy, inexpensive to install. That is because a WARD is built in a sturdy "complete package" with no assembling to do, no wires to run.

Wards are guaranteed for 10 years... built for a lifetime. Approved by American Gas Association Laboratories *complete,* just as installed in the house. Why not write today for catalog, price list and complete details?

Ward Heater Company Representatives: J. E. Davies, Peoples Gas Building, Chicago, Illinois • A. S. Kincaid, 2012 N. Harwood Ave., Dallas, Texas • F. E. Reilly, 200 Davis St., San Francisco, Calif. • H. C. Sanderson, 207 Fulton Bldg., Pittsburgh, Pa. • J. H. Stubbins, 300 E. 68th Terrace, Kansas City, Mo.

WARD HEATER COMPANY, LOS ANGELES, CALIFORNIA

WARD FLOOR FURNACES

Since 1909

THE LARGE APPLIANCE MARKET IN THE NEW SMALL HOME

● **A. F. H. SCOTT, Federal Housing Administration, Washington, D. C.; addressing the American Gas Association Eastern Regional Natural Gas Sales Council, Pittsburgh, Pa., February 4-6, 1937.—(Abstract by G A S.)**

ECONOMISTS variously estimate that there is an accumulated need for new homes that ranges from 1,000,000 to 2,000,000 houses and that there will be a continued need for 500,000 to 750,000 homes annually for the next 10 years. According to the Federal Housing Administrator, it is possible that between 400,000 and 450,000 homes will be built in 1937. Now, what percentage of these are to be supplied by the so-called small house, to that large mass market of low income families who can afford to pay only up to $5,000 for homes?

The shortage of small and inexpensive homes is tremendous. An analysis of sales records of the building industry indicates that during the past eight years the industry, as a whole, has competed for only 20 per cent of the total market, which represents homes costing in excess of $5,000 to build. On the basis of income, over 60 per cent of our nonfarm tenant families cannot afford homes costing more than $5,000.

Let's also examine into the capacity of people to buy homes on the basis of what they are today paying monthly in the form of rent.

The United States Census Report in 1930 shows that 70 per cent of the tenant families paid from $10 to $50 per month in rent. Now, on the 20-year basis, Federal Housing Insured or Amortized Mortgage plan, $1,000 —which represents 80 per cent of the total cost of a $1,250 home—can be financed for around $10 a month; a $2,000 mortgage on a $2,500 house can be financed for about $20 a month; a $3,000 mortgage on a $3,750 house, for $30 a month; a $4,000 mortgage on a $5,000 house for $40 a month. (It is, of course, assumed that an initial cash down payment of a 20 per cent equity as required by the Federal Housing Administration, has been met by the home owner.)

From these figures, it is evident that a large portion out of the 70 per cent of our urban tenant families who pay up to $50 per month in rent have the monthly paying capacity to acquire homes costing up to $5,000, provided houses on which $10 to $50 payments are sufficient can be built in communities where they live.

The only yardstick to prove there is a demand as well as a need for such small houses is that such houses are being purchased as rapidly as they can be built in any community.

Today, purchasing power is available both in cash and in credit. The statements of banks, savings and building and loan associations, and all other types of financial institutions show the "savings of the average American have reached the largest volume in history." Added to this regular amount of deposits and savings, we have the recent disbursements of dividends, greatly adding to the reservoir of available cash, plus a third factor—the increase of pay rolls of large industrial concerns, with the trend very definitely toward increased wages among all classes of workers. What about the availability of credit? There is no question that there exists an almost unlimited source of credit with which to finance new home construction.

Tackling the Selling Problem

Skillful selling is the only important problem remaining in connection with a full measure of success. Each one here has reason to believe that the building industry has done a poor job of creative sales. Very few building supply dealers ever took the trouble to go after business, but in today's competitive market it is necessary to carry sales message and product directly to the door of the prospective purchaser. It is obvious that the small house as a product can't very well be carried to the individual prospect, but it is possible to bring the prospect to the small house.

The National Lumber Manufacturers Association conceived the idea of launching a nation-wide home building demonstration program, the object of which would be the construction of one or more small houses in at least a thousand different communities throughout the United States.

They set as their principal objectives: first, to prove to the local lumber dealer that the so-called small house can be built, including minimum comfort requirements, and sold at a fair profit and within a price range that will attract the masses of possible buyers in the lower income bracket.

Second, to demonstrate to the prospective home purchaser in the local market that the small house is not only theoretically practicable but actually available and thus develop a sales program to build these low cost homes for this untapped and "plus" market. The small homes demonstration program is being given now to the various territorial groups of lumber dealers in their state conventions. The Manufacturers Association is providing the interested dealers with working drawings, specifications, material lists, and detailed instructions for the building of the houses "B," "D," and "E." The distribution is through their own state dealers' association, which in turn follows through to make certain that proper use is made of these plans and that actual demonstration homes will result and that the local lumber dealer becomes the local housing headquarters for his community.

Just what does all this story of a small homes demonstration program have to do with the gas industry?

Getting a share of this small homes market means not alone greater profits these next few years but actually insuring future replacement business as well. Perhaps a reasonable quota should be one in every four of the new homes being built in the industry's various trading areas.

Let's first see what your Federal Housing Administration is doing to help the industry locally.

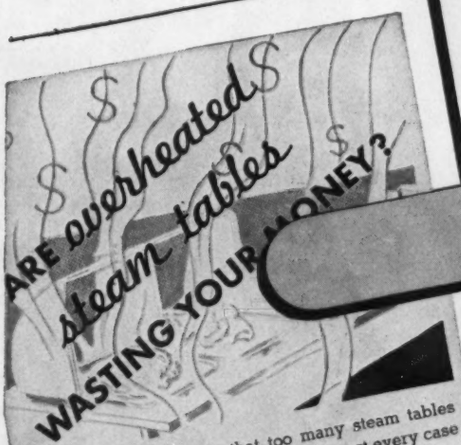
1. It is sending trained crews of representatives to approved mortgage lending institutions throughout the country to present facts that show that people within the low income brackets are good risks.

2. The Administration is endeavoring to bring the operative builder to the realization of the necessity of making mass production homes available in selected areas.

(Turn to Page 32)

POINTING OUT TO YOUR CUSTOMERS *that*

wasted heat means wasted $$



Surveys show that too many steam tables consume more fuel than needed! In almost every case savings were made by replacing with modern tables equipped with Robertshaw thermostats—or by installing thermostats on the tables in use.

Cut your costs WITH
ROBERTSHAW STEAM TABLE THERMOSTATS

Stop the waste that's going on at your steam tables! Check up and see how Robertshaw thermostats will cut fuel bills. Your gas company or equipment dealer will gladly make the survey.

Robertshaw-equipped steam tables actually save their cost in *fuel reduction alone!* That's the experience others have had. That's the experience you will have. In addition they prevent overcooking; loss of flavor; food spoilage.

Every day you delay means money out of your pocket. Ask your gas company or equipment dealer today.

ROBERTSHAW THERMOSTAT CO.
YOUNGWOOD, PA.

ROBERTSHAW STEAM TABLE THERMOSTATS

Cost So Little—Save So Much
FOR STEAM HEATED AND GAS FIRED STEAM

"Stop that waste of heat!" That's the warning that Robertshaw advertising flashes to your customers. *"Stop it with Robertshaw thermostats"* is the advice it gives. *"Have an equipment survey made in your kitchen"* is the action it urges—over and over again.

Install steam tables equipped with Robertshaw thermostats or convert those in use with Robertshaw controls available for that purpose.

The savings made by such installations have often resulted in sales of additional new equipment. In many cases complete kitchen modernization has eventually followed.

ROBERTSHAW THERMOSTAT COMPANY
Youngwood, Penna.

Your customers see heat going to waste over their tables. They see it again in the Robertshaw advertising. They see that Robertshaw steam table thermostats will stop that waste. Cash in on this strong promotional campaign. It's running now in your customers' trade papers.

ROBERTSHAW steam table THERMOSTATS

Cost so little—save so much!

POINTING THE WAY UP

FOR GAS REFRIGERATION SALES

It simply
CAN'T MAKE A
NOISE !
Servel Electrolux is Silent and Different—because its freezing system has No Moving Parts
SERVEL ELECTROLUX
THE Gas REFRIGERATOR

1

2

"WE SAVE MONEY BY ITS SILENT OPERATION" OWNERS REPORT
Servel Electrolux cuts refrigeration costs because its freezing system has no moving parts
SERVEL ELECTROLUX THE Gas REFRIGERATOR

1 **"IT SIMPLY CAN'T MAKE A NOISE."** That's the headline for the July advertisement in Servel Electrolux' prestige series. The illustration itself is striking, the copy concise and clear, the testimonials impressive. This advertisement will run as a single page in both "The Saturday Evening Post" and "Time," reaching a total of 3,584,994 readers.

2 **A STRONG, ATTENTION-GETTING HEADLINE** features this month's advertisement in the newsy tabloid series —"'WE SAVE MONEY BY ITS SILENT OPERATION,' OWNERS REPORT." Straightforward, interesting, convincing. This will run as a single page in "Collier's" and "Liberty" during July, and in the August issues of "Better Homes and Gardens," "American Home" and "Good Housekeeping," reaching 9,224,796 readers in all.

3 **"MILLIONS ENJOY THE LASTING SILENCE AND BIGGER SAVINGS OF SERVEL ELECTROLUX."** Here's another powerful, eye-compelling advertisement running during July in "American Weekly," driving home to that magazine's 6,000,000 readers the economy and comfort of Servel Electrolux refrigerators. This advertisement will be a full-page, four-color smash—aggressive and hard-hitting in treatment.

GAS REFRIGERATION today is building for the gas industry of tomorrow.

Servel Electrolux advertising continues to reach more people than ever before. Servel Electrolux sales continue to break all records. And that means increased gas load . . . increased public desire for all-gas kitchens.

Here are the fundamental steps to peak business: (1) display new Servel Electrolux models prominently in your windows and on the floor of your showroom, (2) tie in with the magazine campaigns by advertising in your local newspapers, (3) send out literature, (4) use poster displays on your local highways, (5) utilize the backs of gas bills for "reminder" advertisements.

Servel, Inc., Servel Electrolux Sales Division, Evansville, Indiana.

SERVEL ELECTROLUX THE *Gas* REFRIGERATOR

3. The Technical Staff is holding local conferences on modern design of small homes as covered in our Technical Bulletin No. 2, and goes over the sample plans of houses "B," "D," and "E" and shows the local contractor builder how to use available materials and how to do away with excessive waste on the job.

4. The Administration has contacted the principal manufacturers in the heating, the plumbing, the electrical, the gas appliance and equipment business, and other "allied" industries, and is directing their attention to the opportunities that now exist in domestic home equipment, appliances, and allied material industries field. We suggested that the manufacturers get up a "package" of their products and equipment suitable for the houses "B," "D," and "E." Next, to advise their distributors and local dealers and their gas company retail outlets that they have "packages" of products particularly selected and designed for this small house program.

5. Further, the Administration is preparing plans for the participation of local retail department stores which have as large a stake as any other allied interest in your community in seeing that these small homes are properly furnished and equipped.

6. Next, the Federal Housing Administration is getting the story of the small homes program to the public through the major market newspapers.

7. The Federal Housing Administration will have less and less to do with the public; and will intensify activity and contacts with industry in order to get all the various allied interests synchronized and cooperating in the small homes program.

Who the lumber dealers are that are participating in the small homes program can be obtained by getting in touch with your own Association secretary or directly with the National Lumber Manufacturers Association in Washington. Similar programs for small homes at low cost are being sponsored by the Brick Manufacturers Association of America of Cleveland, and by the Portland Cement Association of Chicago.

Steam Tables and Coffee Urns in Air-Conditioned Restaurants

(Continued from Page 18)

This problem cannot be answered exactly because the relative humidity of the air surrounding the table affects the rate of evaporation as does the temperature, the barometric pressure and the rate of air circulation.

However, an actual test on a 20 feet x 22 inch steam table gave the following evaporation:

@ 180° F.....14 lbs. per hour
@ 190° F.....20 lbs per hour
@ 200° F.....27 lbs. per hour
@ 210° F.....38 lbs. per hour

Naturally this vapor loss will vary with each different steam table. The construction of steam tables is such that each table will vary in tightness. An ideal steam table from the standpoint of air conditioning would be insulated on sides and top and include some form of vent for both water vapor and products of combustion. It is for this reason that immersion heated steam tables are so desirable. They readily lend themselves to venting while the more conventional under-fired type presents a difficult problem.

The test steam table, 20 feet long by 22 inches wide, is underfired with five of the conventional mushroom type burners, each with a maximum hourly demand of 15 cu. ft. at 850 B.t.u. gas (See Fig. 1). Naturally with manual control, the tendency of the operator is to overheat, and it is usual to find them operating the table somewhere near the boiling point and with all burners on full. This was proved to be so from actual observation in many instances.

The five burners liberated approximately 63,750 B.t.u. per hour. With thermostatic controls this heat input could be cut down 25 per cent or to 47,738 B.t.u., a savings of 15,937 B.t.u. per hour or the equivalent of 1.32 tons of refrigeration.

Taking an empirical figure of .085 —.09 tons of refrigeration per seat, approximately 15 additional occupants can be taken care of by the refrigeration capacity saved. In addition to the reclaimed refrigeration is a gas saving of 18.7 cu. ft. per hour.

The accrued monthly savings with thermostatic controls on the above steam table would be approximately:

Gas—6798 cu. ft...@ 50c per M
(18.7 x 18 hrs. x 30 days)
.....$3.339

Refrigeration Tons—712.8.....?
(1.32 x 18 hrs. x 30 days)..?

Water for condensing and cooling .....149,688 gals.
(4.62 gals. per min. x 60 min. x 18 x 30).....?

Electricity @ 3c per kw.

$$\frac{(965W \times 18 \times 30)}{1000} =$$

521.1 kw. = $15.633

Empirical figure 3½ gals. per min. per ton equivalent.

Finally the value of thermostatic controls for steam tables and coffee urns used in dining rooms can be summed up as:

1. Installed cooling equipment can be used to better advantage, for instead of being used to neutralize the load superimposed by the unnecessary waste heat of manually operated steam tables and urns, it can take care of the load it was intended for.

2. Should air-conditioning (cooling and dehumidification) be considered, thermostatic controls will cut down the initial investment because a smaller machine can be used.

3. Contributing to more comfort during normal summer operation in places without air-conditioning because of reducing the heat input to the minimum.

4. Gas savings 25 to 35 per cent.

5. Lower electric bills.

6. Less wear and tear on steam table because of lower operating temperatures.

7. Finer tasting foods because of proper temperature maintained in the steam table.

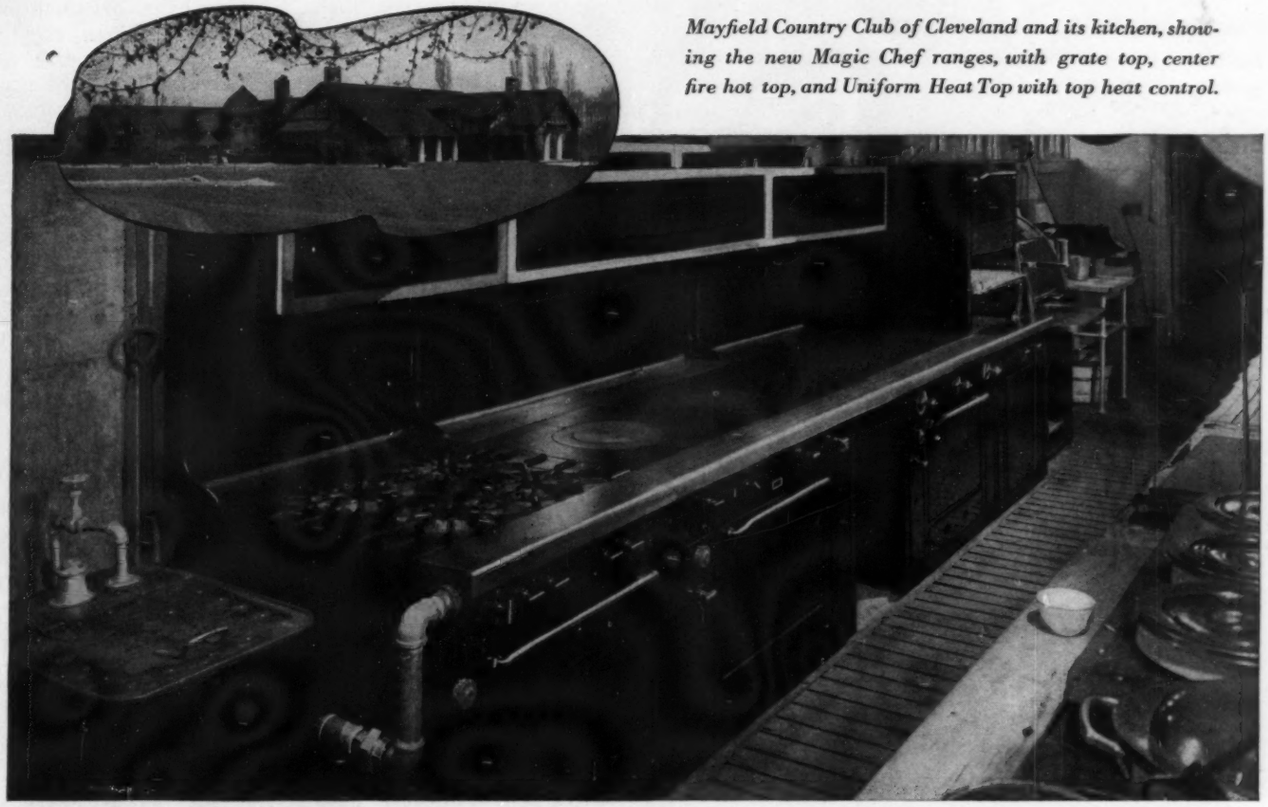
For all practical purposes coffee and water urns can be estimated on the same basis. Properly insulated steam tables should reduce the necessary heat input of present design tables an additional 10 to 15 per cent.

In conclusion, as an observer rather than an engineer or salesman, it is my belief that summer air-conditioning in restaurants should be installed with the following objectives in view:

1. Dehumidification, either by cooling or adsorption.

Reason: Because the human body is the most perfect and efficient heat engine known to man. Under normal healthy conditions the human body maintains a temperature of 98.6° F., regardless of external temperatures.

(Turn to Page 34)



Mayfield Country Club of Cleveland and its kitchen, showing the new Magic Chef ranges, with grate top, center fire hot top, and Uniform Heat Top with top heat control.

Laid 1,000 feet of gas main to cut cooking fuel costs

With New MAGIC CHEF Equipment

● Mayfield Country Club of Cleveland, scene of outstanding national golf matches, has swung 100% to Magic Chef cooking equipment.

So great an opportunity to improve cooking service and reduce fuel costs was presented to Club Manager J. Burchell and Chef Emil Heckendorf, that they saw it would be money saved to throw out their old equipment and install a complete new battery of Magic Chef automatic heavy duty ranges and broiler. The replacement even required the laying of a thousand feet of three-inch gas main up to the clubhouse.

Every month sees an increasing number of such installations in clubs, restaurants, hotels, hospitals and other institutions. The 1937 swing is strongly to Magic Chef—a swing which is convincing evidence that Magic Chef is the answer to today's exacting demand for faster cooking speeds and improved performance, with added conveniences and greater economy.

AMERICAN STOVE COMPANY

Boston • New York • Atlanta • Cleveland • Chicago
St. Louis • Philadelphia • San Francisco • Los Angeles

MAGIC CHEF
AUTOMATIC
HEAVY DUTY
EQUIPMENT

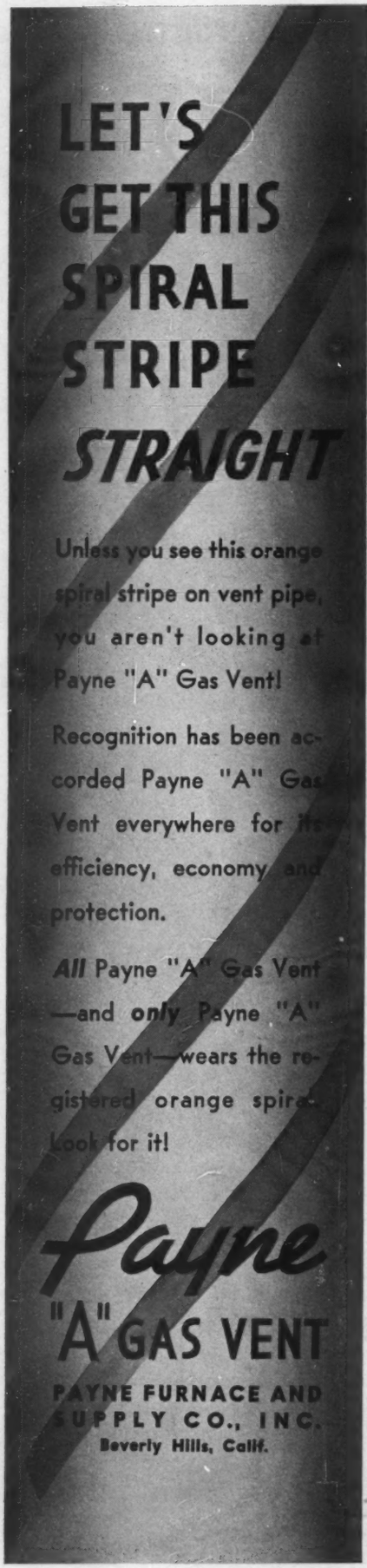
Special Features

Red Wheel Lorain Oven Regulator
Cooking Top Heat Control
Automatic Top Burner Lighters
Automatic Safety Oven Pilot
Magic Chef Non-Clog Burners
Full Heavy Insulation
Gas Economy
Greater Speed
Greater Efficiency
Simplest to Operate
Easiest to Clean
Durability

COMPLETE AND FLEXIBLE LINE OF RANGES, BROILERS, ROASTERS, BAKERS

Look for the RED WHEEL when you buy a MAGIC CHEF

Magic Chef
AMERICAN STOVE COMPANY


LET'S GET THIS SPIRAL STRIPE STRAIGHT
Unless you see this orange spiral stripe on vent pipe, you aren't looking at Payne "A" Gas Vent!
Recognition has been accorded Payne "A" Gas Vent everywhere for its efficiency, economy and protection.
All Payne "A" Gas Vent —and only Payne "A" Gas Vent—wears the registered orange spiral. Look for it!
Payne
"A" GAS VENT
PAYNE FURNACE AND SUPPLY CO., INC.
Beverly Hills, Calif.

(It has been noted that workers in steel mills, bakeries, kitchens, etc., approximate 98.6° F., while the room temperature hovered between 130 to 140° F. Again men working in refrigeration rooms have been observed under external temperatures of 10 to 15° F. These men were in good health and their body temperatures were normal.) In short, dehumidifying or drying air, within controlled and known limits, will do more to promote healthy comfort than any other single item. (Having worked actively and hard 10 hours a day with a pick and shovel under a west Texas sun, so hot that eggs would cook if placed on stones, I felt no discomfort under these conditions, and I believe the reason was due to the dry air. Contrary to this I have tried to do a day's work in Cincinnati, which is so situated geographically, that summer brings high temperatures and high relative humidity. In 1934 the temperature hovered around 108° F., in the shade, with a relative humidity as high as 80 per cent. Assuredly, it was neither comfortable nor easy to do a day's work.)

2. Filtration or Cleaning.

Reason: Little is known regarding the effect of the myriad dusts and pollens that we are compelled to breathe into our lungs every day. The effect of a few air floating substances has been studied but little is known of the vast majority and, inasmuch as filters are the least cost of a good air-conditioning plant, nothing should stand in the way of a good installation.

3. Cooling.

Reason: Undoubtedly cooling of air within reasonable limits has proven merit. Engineers differ in their opinions as to the proper amount of cooling. The trend has been from an original 15 to 20 degrees difference in temperature, until today our larger jobs are maintaining a seven to 10 degrees difference, and utilizing the remainder of the refrigerating capacity to remove some of the moisture from the air.

4. Circulating and Distributing.

Reason: Proper administration of air eliminates possibility of vitiation, and brings fresh, clean, conditioned-air without draft to all parts of a room.

Later we may add a fifth objective and call it "Ionization". A number of tests have already been made to find the effect on the human body of positive and negative ionization of the air. The subjects were depressed by positively ionized air and excited and refreshed by negatively ionized air.

Then, too, we have organizations experimenting with human subjects exposed to air under pressure and under partial vacuum.

Each subdivision of air-conditioning is an interesting and complicated problem. Books have been written about them and more will follow. The business is in its infancy and only the surface has been scratched. Many items have been overlooked in our particular hurry to get some place. Some of these may prove of more importance as time goes on.

■ ■

Water Heating Costs Reported After Portland Tests

Water heating costs are treated in a bulletin issued by Portland Gas & Coke Co., Portland, Ore. The report is based on the tests conducted by Prof. G. B. Wilkes at the Massachusetts Institute of Technology.

The gas used by a gas water heater to heat the amount of water normally used in a six-room residence occupied by 5 people (50 gallons per day, or 1500 gallons per month) would vary from 3250 to 3560 cu. ft. per month, according to the three heaters tested. At Portland rates (76 M c.f.) this would cost from $2.71 to $2.94 a month. Cost of heating the same amount of water by electricity would be $3.42 and $3.93 a month. Portland gas averages 570 B.t.u.

The same tests in Los Angeles, where 1120 B.t.u. natural gas is served, showed that, with gas at 70 cents and electricity at 7.5 mills the cost ratio would be 2.52 to 1 in favor of gas.

■ ■

Eichengreen Elected Officer Of Philadelphia Electric

The Philadelphia Electric Co., Philadelphia, Pa., has elected Leon B. Eichengreen a vice-president of the company. Since 1931 Mr. Eichengren has been assistant to the vice-president in charge of engineering, as head of the gas engineering department. He joined the company in 1928 as manager of the gas department. Prior to that time he was with the United Gas Improvement Co. for 19 years as illuminating engineer, then operating engineer, and finally as general superintendent of gas operations.

■ ■

J. F. Hunter Is Edison Officer

J. F. Hunter, engineer of construction, gas, has been elected assistant vice-president of Consolidated Edison Co. He joined Consolidated Gas Co. in 1904 as a draftsman, and in 1924 he became engineer of construction. In 1934 he was made vice-president of Astoria Light, Heat and Power Co., and engineer of maintenance and construction, Consolidated Gas.

■ ■

Paper Uses Gas for School

Gas and gas appliances were chosen for use during the four-day cooking and home-making school conducted by the *Reading Times*, Reading, Pa., and attended by 7000 persons. A gas range was the grand prize.

PAYNE FORCED AIR UNIT
Sells ITSELF.. and Sells GAS

In two brief years the popular, fast-selling Payne FAU has proved itself an important friend of the gas industry.

And now, with the introduction of a new model, it is destined for even greater activity as a goodwill and sales builder.

Occupying no more space than a water heater, the Payne FAU is ideal for the summer ventilation and winter warmth of the small home.

The harmonizing desert tan enamel cabinet contains a complete heating unit, blower, gas pressure regulator and *all* control equipment. Approved by the American Gas Association Laboratories. Please write for complete details.

Meet the Newest Payne FAU

New streamlined design . . . new desert tan color . . . improved mechanical features.

Payne

FURNACE & SUPPLY CO., INC.
BEVERLY HILLS • CALIFORNIA

INDIANA ASSOCIATION FINDS SUCCESS IN ADVERTISING

(Continued from Page 17)

enough to dominate any newspaper page. It was readily agreed that a "splash" would be useless, and that best results could be obtained by a consistent program. Three years was selected as the minimum length of time for the co-operative program.

The ads themselves were built around the theme of "the Modern Gas Range," with speed, dependability, convenience, style, modernity, flexibility, and economy taking their turn as the main feature of the ads, but with all the others appearing subordinately.

In order to tie the campaign still closer with each individual company's merchandising activities, the large ads were reduced to about half size and mats were supplied for running ads over company signatures in smaller newspapers in each territory.

The first ad appeared in February, 1936, and each month thereafter, without any deviation from the original plan. The entire series of ads had been approved before the campaign started, each company's participation had been determined. The plan went forward with clock-like precision.

Now BROILING is as easy as FRYING!
"I HAVE A WONDERFUL NEW GAS RANGE"
INDIANA GAS ASSOCIATION
A MODERN Gas Range must have these 4 Features

Appealing artistry and useful information are combined in the Association's range advertisements

The results?

It is practically impossible to determine the results in dollars and cents. No individual range sale, no new customer, not one single cubic foot of gas sold can be traced directly to these co-operative ads. They weren't that kind of ads. However, when the Commercial Committee recommended to the Indiana Gas Association at its 1937 convention that the campaign be extended to include refrigeration and water heating, the convention approved the recommendation unanimously. Apparently, each individual company felt that the results, as reflected in their individual income statements, justified going ahead with the campaign.

So, it is seen that there is no magic formula, nothing particularly new or exciting about cooperative advertising in Indiana. Just fundamental, obvious things like pulling together, telling and selling.

CANADIAN GAS GROUP ELECTS E. J. TUCKER, TORONTO, PRESIDENT

EDWARD J. TUCKER was elected president of the Canadian Gas Association at the thirtieth annual convention, held in Ottawa, Canada, June 10 and 11. Mr. Tucker is general manager and secretary of Consumers' Gas Co. of Toronto, Ont. He succeeds W. H. Munro, who is general manager of the Ottawa Gas and Electric Companies and of the Ottawa Light, Heat & Power Co. Toronto was chosen as the 1938 convention city.

T. P. Pinckard, vice-president and general manager of the United Gas & Fuel Co., of Hamilton, was elected first vice-president and Julian Garrett, manager of Northwestern Utilities, Edmonton, Alta., was elected second vice-president. G. W. Allen, gas survey engineer, Toronto, was re-elected secretary-treasurer.

Members elected to the executive committee are: J. M. H. Young, City Gas Co., London, Ont.; John Keillor, B. C. Electric Railway Co., Vancouver, B. C.; V. S. McIntyre, Public Utilities Commission, Kitchener, Ont.; Hugh McNair, Gas Utility, Winnipeg Electric Co., Winnipeg, Man.; J. C. Dawson, Quebec Power Co., Quebec City; J. B. McNary, Canadian Meter Co., Hamilton, Ont.; J. D. Price, Montreal Coke & Mfg. Co., Montreal, Que.; H. B. Fairweather, New Brunswick Power Co., St. John's, N. B.; D. G. Munroe, Montreal Coke & Mfg. Co., Montreal; W. H. Munro, Ottawa Gas & Electric Co., Ottawa.

In addition to the papers listed in the June issue of *G A S*, John McLaverty, Consumers' Gas Co., Quebec City, presented a paper on "Free Electric Water Heaters—Shall We Shuffle Off or Take Up Arms?" A. T. Stuart, who is director of the electrolytic gas department, Hydro Electric Power Commission of Ontario, gave a paper on "The Manufacture of Industrial and Domestic Gases by Means of Electricity. (Complete Gasification of Coal with Oxygen.)" It was illustrated with lantern slides.

During the afternoon of the convention's closing day, delegates visited the National Research Laboratories of the National Research Council and the Fuel Research Laboratories of the Department of Mines and Commerce. A banquet was held the first evening of the convention.

■ ■

U. S. Bureau Publishes Study On Retail Gas Rate Changes

A marked decline in the price of gas for cooking and water heating, beginning in 1928 with the first extensive piping of natural gas, is revealed in Bulletin No. 628 by the United States Bureau of Labor Statistics, entitled "Changes in Retail Prices of Gas, 1923-36." The bulletin may be obtained from the Superintendent of Documents, Washington, D. C. This is the first gas rate statistical survey published by the government.

Fifty cities were used in the survey. In March, 1923, 40 of the 50 cities studied were using manufactured gas, 7 were using straight natural gas, and 3 were using a mixture. In June, 1936, 18 of the 50 cities were using straight natural gas, 25 were using manufactured gas, and 7 using mixed gas.

LOS ANGELES CO. DISPLAY SHOP PROVES GOOD INVESTMENT

FLOOR and window display advertising should be built around a single idea, and the artistic scheme should be subordinate to the message the advertiser is trying to get across to the prospective buyer.

Such is the theory on which H. F. Lougee, supervisor of Southern California Gas Co.'s (Prior to May 13, Los Angeles Gas & Electric Corp.'s) display shop, has developed an outstanding program of floor and window displays for use in that company's offices.

The real purpose of advertising, in the opinion of Lougee, is to sell merchandise or service; and consequently the message should be conveyed at a glance, reaching the prospect at the one point where he or she can do something about it; where interest can result in an immediate sale; and where there is no opportunity to forget the name of the product before the opportunity comes to investigate.

It was four years ago that Lougee, then employed in the Pasadena gas distribution department, began making display backgrounds for gas appliances on exhibit in the company's Pasadena district office. He had a notion he could improve upon the printed placards and posters being used at that time to carry the story of gas's modernity, economy and efficiency to the public. The mere showing of a gas appliance, without some bit of artistry to attract the customer's eye, was not sufficient, he felt; and he began doing things with color and line built around a brief, pointed message.

In a short while, managers of other district offices were asking, "Why can't we have our floor and window displays as effectively arranged as Pasadena?" The answer was so obvious that within a year Lougee was doing work for the whole system.

On September 1, 1934, not quite a year after Lougee did his first job for the Pasadena office, his display shop became a part of the company's advertising department.

The advantages of a company owned display shop are multiple. Fundamental, of course, is the item of cost. At first glance, it would seem that the employment of four or five skilled men to devote their time to this single activity, would make the overhead costs prohibitive. Experience proves, however, that other savings in the utilization of company buildings, company buying power, and company power rates, offset labor costs; and through careful planning of displays, the actual cost is lower than could be secured from an outside organization.

Then there is the advantage of having a trained organization of display artists whose whole attention is focussed on promoting a single commodity. The five men in Lougee's shop approach their work from a more intimate point of view than would be possible in regular commercial display work. In addition they are ready to execute any demands that arise, giving a type of service not procurable from outside sources.

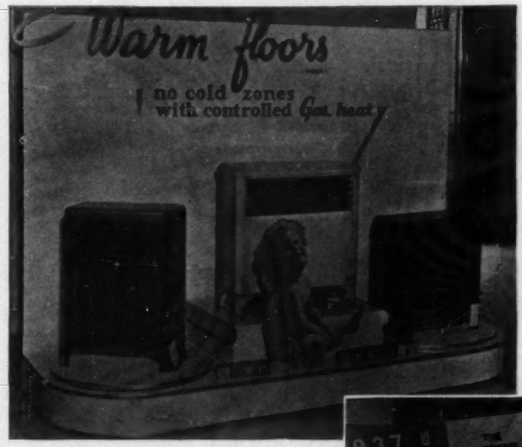
All ideas and designs originate in the shop. Roughs are submitted to the head of the advertising department, J. S. Spaulding, before going into production. Displays are classified under three headings: "A" displays for main and district offices; "B" displays for branch offices large enough to take a second run of major displays; and "C" displays for small offices where only posters may be used.

Planning, designing and scheduling production are important factors. Costs are kept at a minimum, and many displays are revamped several times to reduce original estimated cost.

Various kinds of material have been used: Upson Stabilized board, Masonite, plywood, etc., with fabric or lacquer for finish. All cut-out letters are made of sugar pine or three ply gumwood. Pictures are in oil or photographic blow-ups.

Lougee is assisted by J. L. Gillis, D. Davis, H. R. Roberts, and R. F. Pickering.

■ ■



BELOW: Display supervisor H. F. Lougee (foreground) emphasizes a point of design to assistants (left to right) J. L. Gillis, R. F. Pickering, and H. R. Roberts.

ABOVE: A typical display manufactured in the shop of the Southern California Gas Company.

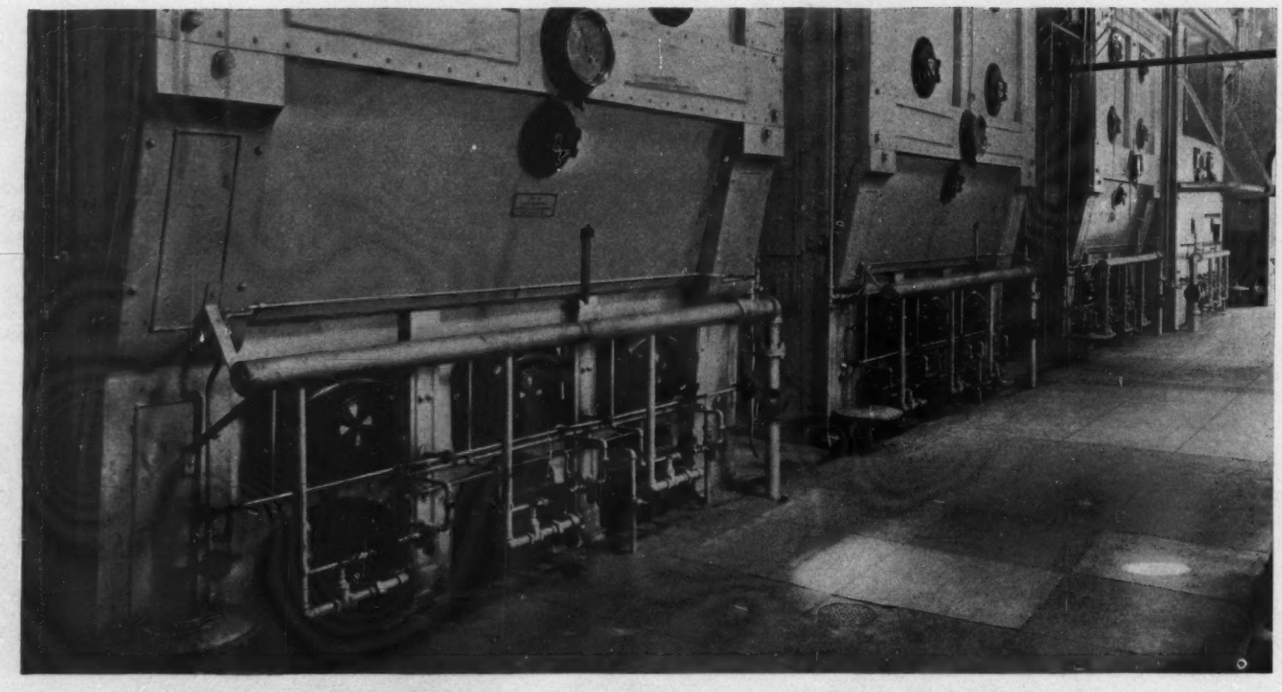
Clark Bros. Co. Merges With S. R. Dresser Company

Official announcement was made, as this issue went to press, of the merger of Clark Bros. Co., Olean, N. Y., with S. R. Dresser Co., Bradford, Pa.

Clark Bros. Co. are builders of 2-cycle gas engines and compressors, having pioneered improvements in engine design in the past 57 years.

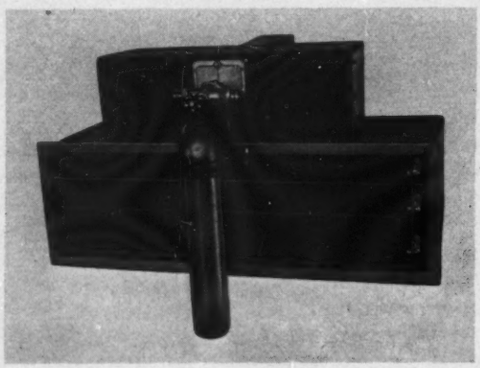
Equally as old and well-known is the S. R. Dresser Manufacturing Co., maker of flexible pipe joints used on many of the country's largest and longest gas-transmission lines. They also manufacture a complete line of pipe-line repair devices.

The officers of Clark Bros. Co are C. P. Clark, president, J. B. O'Connor, vice-president; and of the S. R. Dresser Manufacturing Co., Fred A. Miller, chairman of the board, H. N. Mallon, president, and M. N. Davis, executive vice-president.



MODERNIZE AND ECONOMIZE

THE N·G·E SERIES 106 COMBINATION OIL AND GAS BURNER for large water tube boilers & tube stills



Purchasers report substantial savings in operation costs by using N.G.E. 100 Series Burners. For example, scores of Series 106 Burners, the new N.G.E. Combination Oil and Gas Burners, are paying for themselves out of operating savings in modernized plants throughout the country.

And it's all in N.G.E. engineering. Years of study of the common problems of gas burner installation have resulted in a design and product affording high combustion efficiency and obtaining correct heat application.

In the Series 106, N.G.E. engineers offer the ideal gas burner for installation where the use of oil is required as an alternate or auxiliary fuel. The gas burner utilizes multiple Venturi tubes, permitting gas to be burned in small units; the oil burner is of the external mixing steam atomizing type. The latter is so arranged that by means of quick release, hand operated unions on steam and oil connections, it may be instantly removed through its housing when firing with gas or for maintenance inspection. When firing with oil, the air for combustion is taken in through the same louvres, as when firing with gas. The change from gas to oil fuels may be made instantly or both fuels may be burned at the same time, assuring uninterrupted service. Louvres are readily adapted to any type of automatic control. Write for descriptive bulletin.

LOOK TO THE PIONEERS FOR CONTINUED LEADERSHIP

NATURAL GAS EQUIPMENT, INC.

PETROLEUM SECURITIES BLDG.
LOS ANGELES, CALIF.

1123 HARRISON STREET
SAN FRANCISCO, CALIF.

BAKERSFIELD, CALIFORNIA

Natural Gas Equipment Co. of Texas, 811 Sterling Bldg., Houston, Texas

Air Conditioner Installed In Peoples Gas Light Office

THE first gas motor to be used in an air conditioning unit in Chicago was put into operation in June by The Peoples Gas Light and Coke Co. to supply conditioned air in its 63rd Street store, recently remodeled. A 40 hp. Waukesha gas motor drives a 20-ton Frick freon compressor in the installation.

Other improvements are being made by the company at the main office and at two of the branch stores.

Customers' hall, on the main floor of the Gas Building, is being modernized and various departments centralized there to make it easier for customers to conduct their business with the company. A customers' service section, enclosed by a marble counter, will handle all customer requests except payment of gas bills and appliance sales. This is expected to do away with probably 75,000 customer trips a year on the main floor.

Gas bill payment booths, modernized, will be ranged along the west wall of customers' hall. A new front and door will be placed along the Adams street entrance. Inside the door a traffic lane will be established taking customers past a merchandise display. The entire south section of the hall will be a merchandising area. A women's lounge will be opened beyond.

New ceilings, lighting, and floors are being put into the two branch offices, which will, when completed, resemble the 63rd street store. All customer service requests will be handled at individual desks. Each store will have a model kitchen.

■ ■

G A S Establishes Houston Office; Fomilyant in Charge

In order to give the industry a more personal and a more complete service from the standpoint of editorial coverage, G A S has established an office at 306 Shell Building, Houston, Texas. The office is under the management of Anatol Fomilyant, who for the past two and one half years has been news editor of G A S, working out of the Los Angeles and Chicago offices.

The Houston office will be the focal point for this publication's activities in the States of Texas, Oklahoma, Arkansas, Louisiana, and Kansas. The telephone number is CApitol 2093.

■ ■

Honors For P. J. Sweenie

Phillip J. Sweenie, since 1925 superintendent of the office facilities department, The Peoples Gas Light and Coke Co., Chicago, Ill., recently was given additional responsibilities and now is superintendent of three major departments—office facilities, stationery, and correspondence. He has been with the company since 1905.

Well attended was the annual home service conference and training course at American Gas Association Testing Laboratories, Cleveland, Ohio, sponsored by Home Service Committee, American Gas Association.

DELEGATES FROM 20 STATES AT A. G. A. HOME SERVICE MEETING

AN extensive manufacturers' exhibit of representative types of gas appliances and accessories, and the attendance of home economics teachers and college students in home service were innovations this year in the annual four-day home service conference and training course sponsored by the Home Service Committee of the American Gas Association at the Association's National Testing Laboratories, Cleveland, Ohio, June 15-18.

In attendance were home service directors representing utilities and gas appliance manufacturers in 20 states and three Canadian provinces, home economics editors from six national women's magazines and two newspapers, and representatives from 12 high schools and colleges.

R. M. Conner, director of the Laboratories, spoke at the opening meeting, stating that a home service worker should have a thorough understanding of the economics of the gas industry. Other speakers from the Laboratories' staff were Dr. F. E. Vandaveer, supervisor, who discussed thermostats and automatic devices; W. M. Couzens, research engineer, who spoke on "The Modern Gas Range"; and Franklin R. Wright, publications manager, who prefaced a tour through the Laboratories with an illustrated talk.

Among other speakers were Harry Swenson, director of displays and home planning, The Peoples Gas Light & Coke Co., Chicago; Hall Henry, vice-president, Utility Management Corp., New York City; C. E. Gallagher, president, The East Ohio Gas Co.; D. K. Smith, Rochester Gas and Electric Corp.

Elizabeth Sweeney, chairman of the A. G. A. National Home Service Committee and home service director for New York State Electric and Gas Corp., Geneva, N. Y., and Jessie McQueen, home service counsellor of the American Gas Association, were in charge of the meetings.

Social activities included a dinner at which those registered at the conference were guests of the Association of Gas Appliance and Equipment Manufacturers. Lyle Harvey, vice-president and general manager, The Bryant Heater Co., was the principal speaker. Another treat was extended by Servel, Inc., which entertained the group at dinner on the grounds of the Great Lakes Exposition and at the "March of Time" broadcast.

■ ■

Oklahoma Natural Opens Line to Enid this Month

Oklahoma Natural Gas Co., Oklahoma City, Okla., will put its recently completed 38-mile pipe line from the Crescent Field to the city of Enid, Okla., into operation this month, according to L. A. Farmer, general superintendent.

The line consists of 20 miles of 10-inch and 18 miles of 8-inch transmission pipe, besides miscellaneous field gathering lines. It provides an outlet for gas in the Crescent, Marshall, and Lovell fields, and an additional source of supply for the city of Enid.

GAS ENGINE POWER FEATURED AT INDUSTRIAL SALES CONFERENCE

STARTLINGLY different gas installations and a practical plan for procuring a large part of the country's power load were presented to enthusiastic audiences at the National Conference on Industrial Gas Sales held in Chicago, June 8-9. The conference, sponsored jointly by the Industrial Gas Section and the Midwest Industrial Gas Sales Council of the American Gas Association, marked another highlight in the series of Industrial Gas Section meetings that are held yearly. Ralph L. Manier, Central Division Staff of Hudson Power Corp., is chairman of the Industrial Gas Section, and Lawrence R. Foote, Central Illinois Electric & Gas Co., is chairman of the Midwest Council.

Power Load Paper

Highlight of the sessions on the first day came in the afternoon when Ralph S. Wenner, The Ohio Fuel Gas Co., presented a plan for obtaining for gas some of the country's power load. His paper was entitled "Report on Gas Engines for Power Generation." Mr. Wenner's paper appears on Page 14 of this issue of *GAS*.

The conference opened on Tuesday morning with Mr. Manier presiding. F. X. Mettenet, vice-president, The Peoples Gas Light and Coke Co., Chicago, welcomed those in attendance.

George W. Parker, Mississippi River Fuel Co., in a paper entitled "Application of Gas Radiant Tubes to an Enameling Furnace," described the installation at the National Enameling and Stamping Co. plant, Granite City, Ill. This was a conversion job, and has now been in operation for a year, with savings in fuel costs over electricity of $20,000, production increase of 20 per cent.

Valuable operating data were contained in a paper, "Application of Gas Radiant Tubes to Batch Type Enameling Furnaces," by F. S. Markert, Ferro Enamel Corp. The first gas radiant tube conversion of a batch type porcelain enameling furnace was installed about two years ago, he said, under the sponsorship of the A.G.A. committee on Industrial Research.

The paper, "Application of Gas Radiant Tubes to Galvanizing Furnaces," presented by A. M. Thurston, The East Ohio Gas Co., Cleveland, described the installation at the plant of the National Telephone and Supply Co., Cleveland. One of the outstanding achievements of this furnace is the delivering of the heat to the upper third of the pot where the cold work is immersed and surface radiation heat losses are great.

Annealing Furnace Described

Somewhat of a sensation was created when a short cycle anneal of only 14 hours in a furnace only 60 ft. long as against six days formerly with a furnace 400 ft. long was described in a paper, "Application of Gas Radiant Tubes to Short Cycle Malleable Annealing Furnaces," by C. H. Martin, Chicago, representing Holcroft and Co. and the Eclipse Fuel Engineering Co. The furnace described is at the plant of the McCormick Malleable Foundry, Chicago. The furnace, of pusher type and using a prepared atmosphere preserved by a vestibule at either end, anneals 20 net tons daily.

T. E. Wood, The Manufacturers Light and Heat Co. and H. M. Heyn, Surface Combustion Corp., described briefly various installations with which they were familiar.

Homer J. Buckley, president, Buckley Dement Co., known as the world's largest direct-by-mail organization, spoke at luncheon on "Developing the Right Mental Attitude." Lawrence R. Foote presided over the afternoon session.

R. A. Hastings read a valuable paper prepared by W. A. Darrah, president, Continental Industrial Engineers, Inc., on "Application of Controlled Atmosphere to the Annealing of Copper and Copper Alloys."

An interesting discussion of atmosphere as applied to ferrous metals was presented by William O. Owen, Surface Combustion Corp. His paper, "Design and Operation of Equipment for the Generation of Controlled Atmospheres with Respect to Annealing and Hardening Processes," described installation in various plants.

Mr. Wenner's paper, mentioned above, followed next. After the spirited discussion at the close of his paper, a rising vote of thanks was given to Mr. Wenner.

Inspection Trip

About 70 delegates made the inspection trip next day in special buses. At the Carnegie-Illinois Steel Corp., four representative installations were viewed: the seven two-hole soaking pits at the slab mill, which are heated with a mixture of blast furnace and natural gas; the three 30-ton reheating furnaces of the continuous slab mill, using straight natural gas; the 15-ton reheating furnace (natural gas) of the alloy mill; the 250 hp. gas-fired steam boilers and their systems of control.

Peak of the day was the tour of the George M. Clark Division of the American Stove Co., Harvey, Ill., where one of the most modern gas radiant tube continuous enameling furnaces had just been built and was ready to be fired. It is of the hairpin type, and the hot tubes are some of the largest yet built. The visitors had opportunity to climb through the furnace. Other installations inspected in this plant included a counterflow muffle type gas furnace and a two-compartment continuous japanning oven equipped with gas pipe burners in metal radiators with fan exhaust.

The tour closed with inspection of the 14-hour short cycle malleableizing furnace at the International Harvester Co. plant, description of which had roused great interest the preceding day.

Calendar

July

Michigan Gas Association,— Grand Hotel, Mackinac Island, Mich., July 1-3.

August

Pacific Coast Gas Association — Olympic Hotel, Seattle, Wash., Aug. 17-19.

September

American Gas Association—Cleveland, Ohio, week of September 27.

Midwest Section, National Bottled Gas Association—Cleveland, Ohio, sometime during week of September 27.

October

Chicago Exposition of Power and Mechanical Engineering—New International Amphitheater, Chicago, Ill., October 4-9.

American Society for Metals—1937 Metal Congress and Exposition, Atlantic City Auditorium, Atlantic City, N. J., October 18-21.

National Bureau of Standards—Conference on Corrosion and Protection of Pipe Lines, National Bureau of Standards, Washington, D. C. In October. Definite date to be announced later.

November

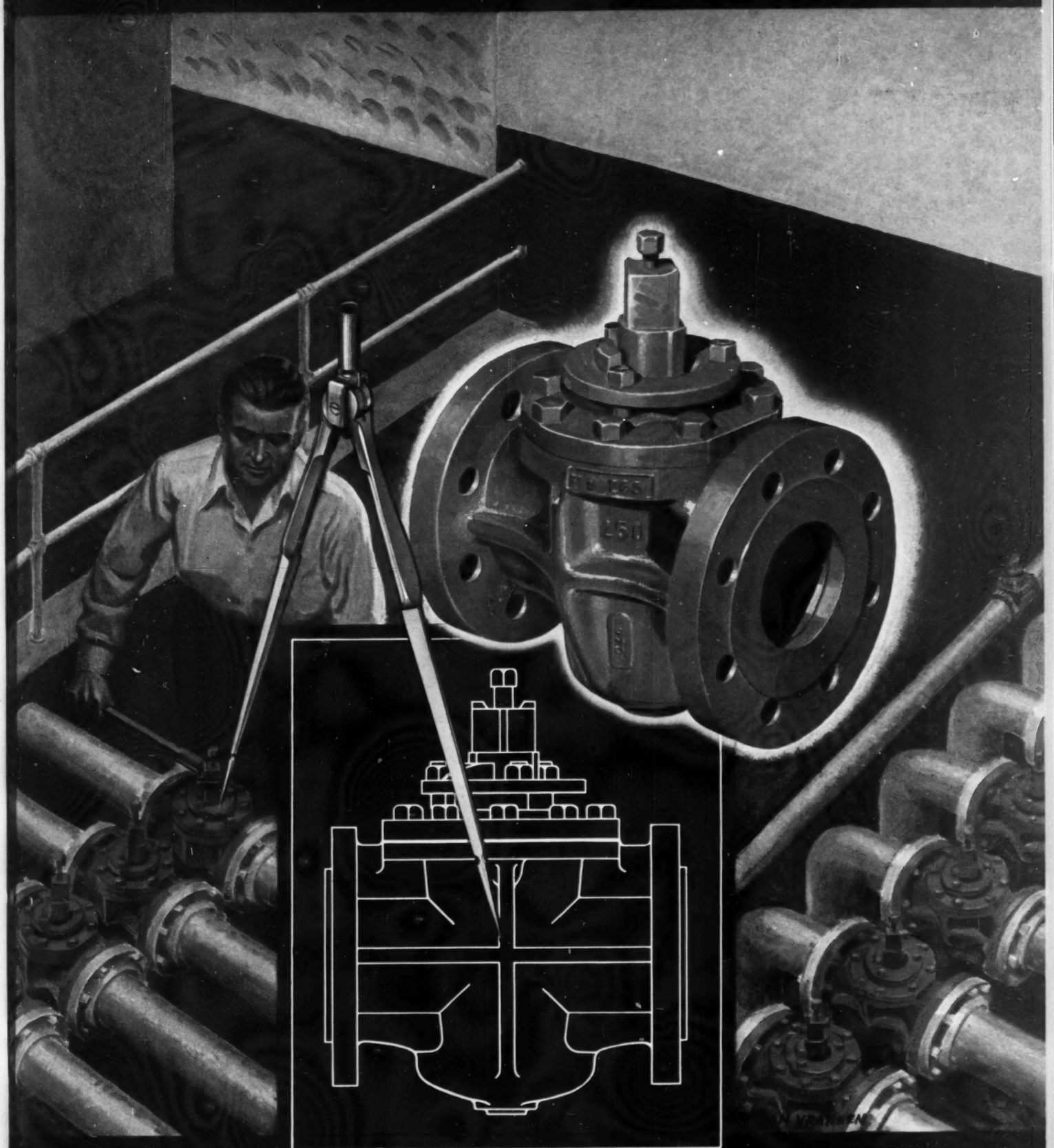
American Petroleum Institute — Stevens Hotel, Chicago, Ill., Nov. 9-12.

Seventeenth Annual Gas School Conference—Iowa State College, Ames, Iowa, Nov. 10-13.

February, 1938

New England Gas Association—Hotel Statler, Boston, Mass., Feb. 24-25.

SOUND ENGINEERING ASSURES MAXIMUM SERVICE

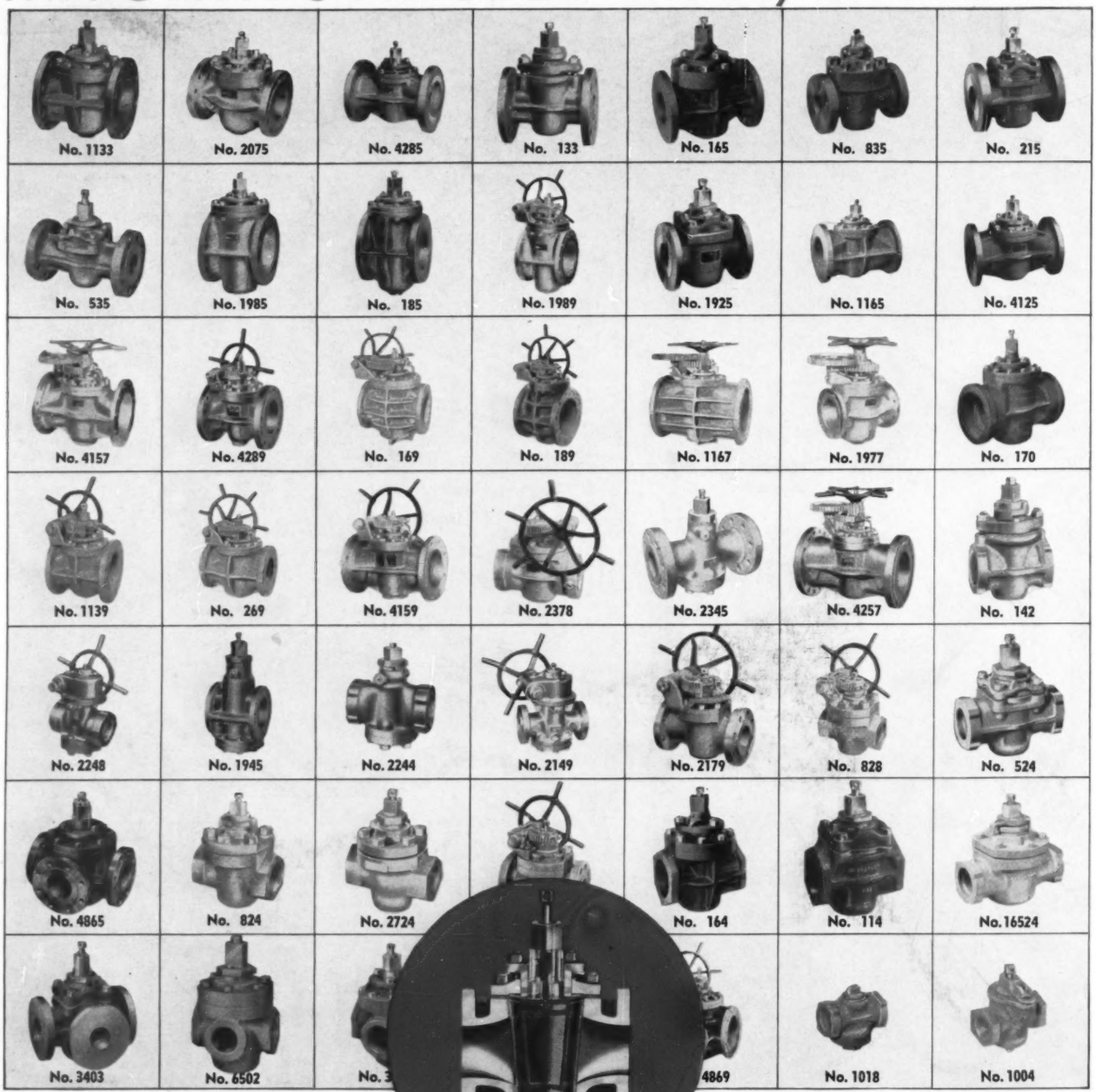


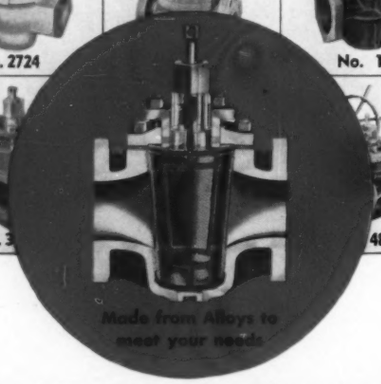
NORDSTROM VALVES

THE ONLY VALVES THAT *SERVE* EVERY MAJOR VALVE NEED

THE PERFECT APPLICATION OF A PRINCIPLE

Your UNRESTRICTED *choice of Nordstroms*





MEET ALL MAJOR VALVE NEEDS

Sizes ½" to 30". Pressures to 5000 lbs. w.p.
Temperatures —60° to +600° F.

MERCO NORDSTROM VALVE CO.
A Subsidiary of
PITTSBURGH EQUITABLE METER CO.
Main Offices: Pittsburgh, Pa. Branch Offices: New York City, Buffalo, Philadelphia, Columbia, Memphis, Atlanta, Chicago, Kansas City, Tulsa, Houston, Los Angeles, Oakland. Canadian Representatives and Licensees: Peacock Brothers, Ltd., University Tower Building, Montreal, Quebec.

NORDSTROM VALVES

LUBRICATED PLUG

PATENTED "SEALOPORT" LUBRICATION

Community Natural Makes Personnel Changes

COMMUNITY Natural Gas Co., Dallas, Texas, has made several changes in personnel, according to L. B. Denning, Jr., operating manager.

E. L. Buelow, for six years district manager at Hillsboro, has been transferred to El Paso as office manager of the Texas Cities Gas Co. there.

J. Henry Duke succeeds Mr. Buelow at Hillsboro. Mr. Duke has been manager of the Ennis district of Community Natural for 15 years. He was manager of the Municipal Gas Company at Ennis before its consolidation with Community Natural Gas Co.

Mr. Duke's successor as district manager at Ennis is L. D. Black, Jr., who has been district manager at Eastland. R. Norris Wilson, formerly district storekeeper in Abilene, has been made district manager at Eastland.

In Community's Abilene division, the following changes have been made: W. L. Srygley, former shop foreman of Texas Cities at El Paso, is now Abilene division maintenance supervisor; W. P. Thompson, Abilene chief clerk, has been appointed district storekeeper; T. Berney Blain, former bookkeeper, has been appointed Abilene chief clerk. Logan E. Morris, emergency service inspector, succeeds Mr. Srygley as El Paso shop foreman.

■ ■

Gas Range Acceptance Leads All Appliances, Says Booklet

The San Francisco division of Pacific Gas and Electric Co. has issued a letter-size booklet outlining 1937 sales opportunities for gas and electric appliance dealers. It is being sent to dealers as a summary of points brought out in a series of dealer-company dinner meetings held earlier in the year. Included are tables and charts showing appliance sales during the past three years and peaks in sales brought about by campaigns. Each major appliance is discussed separately.

Of gas ranges the booklet states that gas ranges probably have greater public acceptance than any other appliance, gas or electric, in the industry. In the face of this wide acceptance, however, it shows more response to a co-operative promotional effort than any other household appliance.

■ ■

Engel Serves 65 Years

Francis Engel, vice-president and general superintendent of Elizabethtown Consolidated Gas Co., Elizabeth, N. J., recently completed 65 years of service with the company. His associates entertained for him at a dinner, which also honored 33 other employees with service records of 25 years or more.

■ ■

Boehm Joins Chicago Utility

Alfred M. Boehm, formerly with Worthington Pump and Machinery Co., has joined The People Gas Light and Coke Co., Chicago, Ill., as supervisor in charge of selling industrial gas for internal combustion motors. He was graduated from the University of Notre Dame in 1924 in mechanical engineering.

Houston Natural Gas Co. entertained 6,000 visitors during an open house, held after the Houston offices and display room had been enlarged and remodeled.

HOUSTON NATURAL GAS SYSTEM IN REMODELING PROGRAM

FOUR years ago the Houston Natural Gas System started a program of rebuilding and refurnishing the company's offices in the various cities and communities served by this South Texas gas system.

The modernization program was started, according to Frank C. Smith, president and general manager, because the company believes that it is necessary to be modern and look modern "if we want our customers to accept us and our gas service as 'the modern fuel.'"

A design was prepared for a store front and an interior that could be used throughout the entire system. Thus, when all the offices of the Houston Natural Gas System have been remodeled, they will have a uniform appearance and similar interior arrangement and finish.

The Wharton office was the first to be remodeled. Then offices in El Campo, Victoria, Beeville, Alice, Kingsville, Goose Creek, La Porte, and Alvin were rebuilt. The enlarged and remodeled offices in Houston were completed in April, with an open house attended by 6000 customers. No set schedule is being followed, and no certain time has been set for completing this building program, because each office is being modernized as lease terms or other circumstances make it opportune.

Since the gas company's office has been among the first in each community to remodel and become modern, the work has attracted the attention of the townspeople, and thus the company has enjoyed valuable word-of-mouth-advertising.

Each local office is arranged for the display of gas ranges, water heaters, gas refrigerators, and gas heating equipment. Since the Houston Natural Gas System does not sell appliances for its own account but only for dealers, each appliance displayed in the company's offices is dealer merchandise and carries the name of the local merchant who sells it.

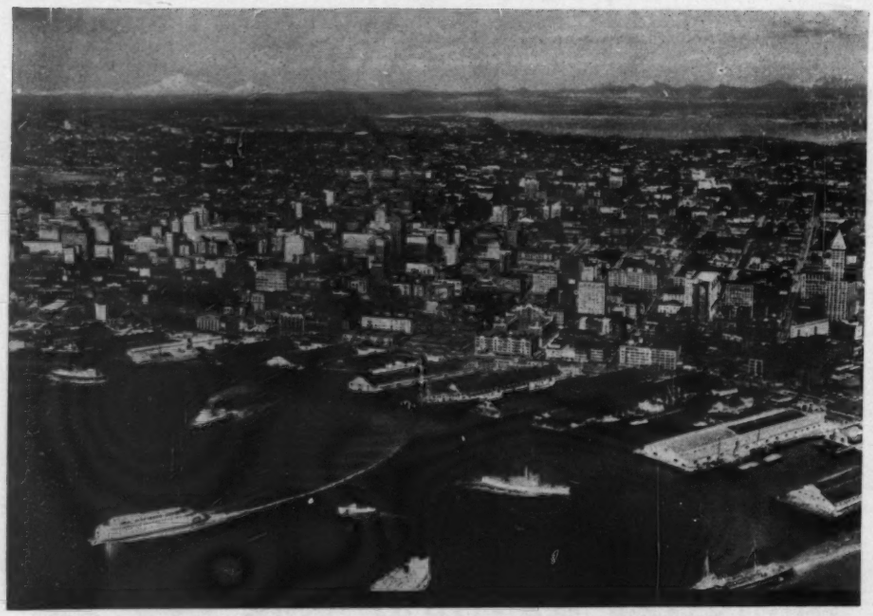
Within another year probably all of the offices of this gas system will have been modernized. The next step will probably be that of installing gas operated cooling and air conditioning units. Offices in Goose Creek and Beeville have already been equipped with such cooling units. The company finds that they not only increase efficiency and add to the comfort of the office personnel, but help to interest local merchants and business concerns in gas operated air conditioning—cooling installations.

■ ■

N. Henry Gellert Heads New Great Lakes Utility Co.

All properties owned by the Great Lakes Utilities Corp., reorganized in Federal Court, have been taken over by The Great Lakes Utility Co., a new holding company, and N. Henry Gellert has been elected the latter's president. The companies affected are Ohio Gas Light and Coke Co., Gas Corp. of Michigan, Rochelle Gas Co., Paxton Gas Co., Independence Gas Co., Peoples Gas and Power Co., LeMars Gas Co., Watertown Gas Co., Virginia Gas and Utilities Co., and Martinsville Gas Co.

Mr. Gellert has been a gas executive in the East and Middle West for many years, was chief engineer during construction of the gas plant in San Juan, Puerto Rico, was graduated from Yale College and in civil engineering from its Sheffield Scientific School, and has a graduate degree of civil engineer from Sheffield.



Air view of Seattle, scene of the forty-fourth annual convention of the Pacific Coast Gas Association, August 17, 18, and 19. Delegates from Pacific Coast gas companies, gas appliance dealers, and gas appliance manufacturers will attend the meeting. The city lies between Puget Sound (foreground) and Lake Washington (upper right). In the distance, are Mt. Baker and the Cascade Mountains.

FORM P. C. G. A. CONVENTION PLANS

SEATTLE will be the scene of the Pacific Coast Gas Association convention, August 17, 18 and 19. Representatives of gas companies, gas appliance dealers, and gas appliance manufacturers from the entire Coast will attend the convention, according to James F. Pollard, president of the Association. Mr. Pollard, who is also president of the Seattle Gas Co., will preside at the meetings.

Highlighting the convention program will be a talk by Floyd W. Parsons, well known business and advertising executive. Several other outstanding speakers are expected to attend and speak during the sessions of the convention.

Arrangements for the convention are being made by T. E. Roach, Washington Gas and Electric Co., Tacoma, general chairman for the convention. Members of his committee are: E. J. Ludeman, entertainment, and R. W. Coblentz, golf, both of the Washington Gas and Electric Company; J. Wilson Gaw, banquet; Chauncey H. Smith, hotel accommodations; L. H. Steele, attendance, reception and properties, Hyrum Crofts, registration; Frank Cadman, convention newspaper and L. S. Davis, transportation, all of the Seattle Gas Co.; and Warren E. Kraft, Erwin, Wasey and Co., publicity. Mrs. James F. Pollard and Mrs. T. E. Roach will be convention hostesses.

Entertainment as well as business sessions will be included on the convention program. Special programs and entertainment for the wives and families of convention delegates are also being planned, by the committee.

■ ■

University of Kansas Adds Gas and Oil Curriculum

The University of Kansas, recognizing the growing importance of gas and oil in the state, is expanding its work for the gas and petroleum industries by adding to its staff, establishing a new curriculum, and increasing the laboratory equipment, according to announcement by C. M. Young, professor of mining engineering.

Dr. Eugene A. Stephenson has been appointed to the position of professor of petroleum engineering, as the first step in the new program. Dr. Stephenson took his Bachelor of Science degree at Adrian College, Michigan, and his doctor's degree in geology at the University of Chicago in 1915. From 1912 to 1916 he was instructor in economic geology at that institution. In 1917 he was made chief geologist for the South Penn Oil Co. of Pittsburgh and continued in this position until 1925, when he became associated with Ralph E. Davis, Inc., of Pittsburgh and New York. For the next five years he had a varied experience with engineering problems in most of the important oil and gas fields of the United States, Mexico, and Canada. From 1930 until joining the Kansas University staff, he was professor of petroleum engineering at the Missouri School of Mines and Metallurgy. He has carried on an extensive consulting practice.

■ ■

H. H. Sprague, Meter Co. Founder, Dies at 79

Henry H. Sprague, noted inventor, recognized authority on gas meters in America, and chairman of the board of directors of The Sprague Meter Co., Bridgeport, Conn., died on May 29 in Bridgeport. He was 79 years old.

H. H. SPRAGUE

Mr. Sprague, a native of Newark, Ohio, was graduated from Yale University in 1881 and became an architect in Chicago. While in this work he became interested in gas meters. Moving to Indianapolis he opened a shop for the manufacture of cast iron poppet valve meters. Later, he sold this business and in 1890 went to Bridgeport, with the idea of developing a cast iron gas meter for the manufactured gas industry. Under his guidance the business grew to such proportions that it was incorporated in 1907 with Mr. Sprague as president. He held this office until 1931, when he became chairman of the board.

Although Mr. Sprague had been in poor health for a year, he maintained an experimental laboratory in his home and continued his development work until his death.

■ ■

Goedjen and Carson Become Directors of Wisconsin Co.

A. J. Goedjen, division manager, and A. C. Carson, chief engineer, both of Green Bay, Wisconsin, have been elected members of the board of directors of the Wisconsin Public Service Corp., according to J. P. Pulliam, president of the company. This action was approved at the annual stockholders' meeting.

Mr. Goedjen, a graduate of the University of Wisconsin, joined the Wisconsin Public Service Corp. in 1916, as assistant manager in charge of transportation at Green Bay. From 1918 to 1922 he served as engineer in the Milwaukee office. In 1928 he was appointed manager of the Green Bay division.

Mr. Carson has been associated with the corporation since 1918. In 1925 he was appointed manager of the Green Bay division and in 1927 was named chief engineer for the entire company.

■ ■

Bell and Thatcher Promoted

Lyman H. Bell, formerly district manager at Stillwater, Okla., of the Central States Power & Light Corp. of Oklahoma, has been promoted to the new business department at the head office in Tulsa. R. W. Thatcher, who has been at Hobart, has been named district manager to succeed Mr. Bell.

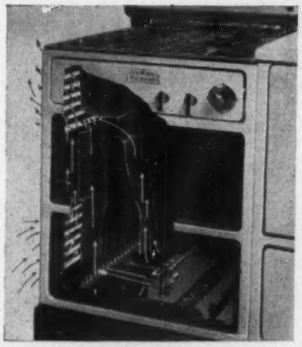
ANOTHER GAIN FOR GAS!

A **WARM** KITCHEN ON COLD DAYS

A **COOL** KITCHEN ON HOT DAYS

Spectacular WEDGEWOOD *Gas Range*

Introduces BUILT-IN CIRCULATOR UNIT



CROSS SECTION OF BUILT-IN GAS CIRCULATOR HEATER

Shows heating unit and automatic Safety Lighter. Heating unit formed from a single piece of steel for better conductivity, more heat. Capacity 20,000 BTU. Does not increase range size. Patent applied for.

For the first time, thousands of homes with limited floor-space can enjoy the cheering heat of a gas circulator kitchen heater. This remarkable new WEDGEWOOD All-Season MASTERPIECE has a gas circulator *built right in*. Not a single inch has been added to the length of the standard range!

Experienced gas range dealers report that an amazing number of buyers in the past have had to do without a kitchen-heater because of its added length. Even in larger homes the trend is toward small compact kitchens to save steps for the housewife. These thousands are now a *new* market for this newest WEDGEWOOD! It offers every advanced cooking aid PLUS the real comfort of gas circulating heat.

OTHER IMPORTANT WEDGEWOOD FEATURES

EXTRA LOW TEMPERATURE OVEN
True low temperature cooking. Automatic lighting.

ROTO-DISC ASTOGRIL BROILER
Sears and broils both sides at once.

AUTOMATIC CLOCK AND TIMER
Complete automatic control.

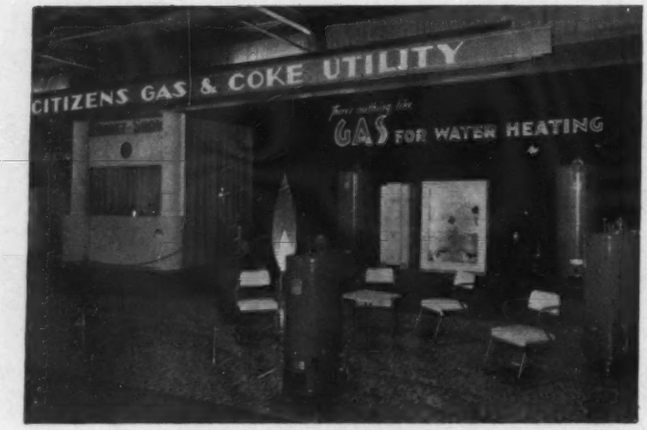
SPEED-PLUS-SIMMER BURNERS
Light automatically.

DOUBLE LIFT-UP COVERS
Double pot-and-pan working area.

GLIDING UTILITY DRAWERS
For utensils. Also to warm dishes.

WEDGEWOOD **THE MODERN GAS RANGE MAKES FRIENDS FOR GAS**

JAMES GRAHAM MANUFACTURING CO. • SAN FRANCISCO, LOS ANGELES, NEWARK, PORTLAND



One of the five exhibits of the Citizens Gas & Coke Utility featured at the Indianapolis Home Show. At left is seen the stage on which puppet players presented a skit putting forth the advantage of gas appliances in the home.

PUPPETS FEATURED AT CITIZENS GAS CO. HOME SHOW EXHIBITS

MORE than 125,000 Hoosiers were thoroughly sold on the idea that "There's Nothing Like Gas" for cooking, refrigeration, water heating and home heating when they passed through the Citizens Gas and Coke Utility's five exhibits at the 1937 Indianapolis Home Show, according to Fred Rastenburg, general sales manager of the company.

The American Gas Association campaign slogan, "There's nothing like Gas," was used throughout the four commercial displays, and colorful decorations and elaborate lighting effects were used to enhance the effect of gas appliances displayed against a green velour curtain. The fifth gas utility attraction was a puppet show which many visitors acclaimed the most enjoyable presentation in the building. The use of gas appliances for the home was promoted by the dialog and actions of the marionettes.

Three pantomime puppet attention compellers preceded the featured act of the marionettes' performance at the utility's center booth. Following a skeleton dance, some jugglers, and a trapeze exhibition, puppet characters of "an average family" took the stage in a specially written play which put forth the advantages of using all gas appliances in the home. This was accomplished to the great discomfiture of "Dirt," who was banished in the last scene by the Gas Grenadiers.

Recorded voices spoke for the little wooden actors, and the play was produced with appropriate musical cues. After each performance the hands of a clock above the stage were turned to the hour of the next show.

Local newspaper publicity attracted many visitors to the Home Show expressly to see the puppets, and several hundred spectators, many of them drawn from other exhibits in the building, enjoyed every performance. Four other gas utility displays were of strictly commercial nature.

Five booths, each devoted to one type of gas appliance, made up the exhibits. Magic Chef and Roper gas ranges were featured at the first booth, a Servel Electrolux family of gas refrigerators at the next, and center of attraction was the puppet show. Farther on, Ruud and Penfield automatic gas water heaters were shown, and the end booth presented Janitrol, Bryant, and American Gas Products home heating equipment.

The color scheme and decorations used throughout the exhibits were arranged by Bozell and Jacobs, Inc., advertising representatives for Citizens Gas and Coke Utility, in conjunction with Mr. Rastenburg, who was responsible for all details of the utility's displays.

Giant gas flames of translucent paper spaced the exhibits along the rear, the flames being made more colorful by indirect illumination. Tinted photographic murals illustrated the commercial exhibits, shadowboxed on the center platform of each display. The floor was covered with patterned linoleum.

Citizens Gas and Coke Utility booths were held together by similarity in display and decorative design, and by the company title which was set in illuminated cut-out letters along the top rear of the center three exhibits.

Three utility salesmen for each exhibit were always present to receive the public. They dressed uniformly in light trousers and black, double-breasted coats. Several manufacturers' representatives were also in attendance to explain the details and advantages of their products.

Field Without Accidents Since 1916 Wins Flag

SIX hundred employees and wives attended the third annual safety meeting of the United Natural Gas Co. and affiliated companeis. held recently in the senior high school building, Oil City. Pa.

The first part of the meeting consisted of graduation exercises for 387 employees who had recently completed the standard Red Cross First Aid course conducted by the company in sixteen centers in its territory.

The second part of the meeting opened the "After the Whistle Blows" campaign, sponsored by the company in an effort to prevent accidents off the job and to carry safety into the homes.

A. C. Burwell, superintendent of the Station Department, received the President's Safety Trophy for the best safety record. The Safety Flag was presented to Parker Field for the best individual field record. This field has had a perfect record since May 1, 1916.

■ ■

Texas Cities Co. To Replace 8000 Feet of 14-inch Line

Approximately 8000 feet of 14-inch pipe line used by the Texas Cities Gas Co., Dallas, Texas, in supplying gas to Galveston will be replaced with concrete-covered pipe, according to P. E. Nichols, Galveston distribution manager of the company. This project is the sixth major replacement which the company has made in a fight against corrosion.

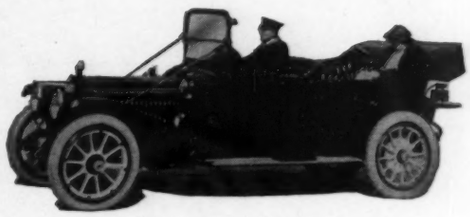
■ ■

Ames, Iowa Renews Franchise

Iowa Electric Light and Power Co., Cedar Rapids, Iowa, has been granted a 25-year franchise for furnishing gas to private users in Ames, Iowa. The essential features of the franchise are the same as the previous gas franchise, which expired in 1934, according to J. H. Ames, city manager.

Remember how self starters boomed Automobile Sales?

● **In 1912, an automobile company discovered a single extra feature that made sales *boom*. The self starter—comparatively inexpensive itself—proved to be the clinching argument in selling $2,000 cars because it made motoring *more convenient*.**



● **The new Wilcatrol gives your line of gas room heaters the same kind of *extra sales appeal*. The Wilcatrol can *close* room heater sales because it offers *added comfort*—plus *added economy*—plus *added convenience*. Important features of this sales-compelling appliance are listed below.**

WILCATROL:

A handy remote control thermostat for gas room heaters

★

The Wilcatrol maintains room temperature at an even, comfortable level by turning up the gas when the temperature drops—turning down the gas when the room becomes too warm. Priced so low it may be merchandised with even the smallest space heaters.

Easy to install—easily applied to all types of gases. Capacity sufficient for largest heaters—pressure drop through valve is so low that good operation is insured under very low gas pressures. Provided with by-pass adjustment for conventional high-low operation. Accurate within one degree F. Adjustable bleed compensates for varying distance between wall thermostat and diaphragm. This permits unusual installations—where other types have failed. Use the coupon today to get full description and prices on this dependable control that will help sell your space heaters—and keep them sold.

WILCOLATOR COMPANY, NEWARK, N. J.

Gentlemen: Please send me full details and prices on the Wilcatrol.

Name.....

Company.....

Address.....

City..... State.....

(2)

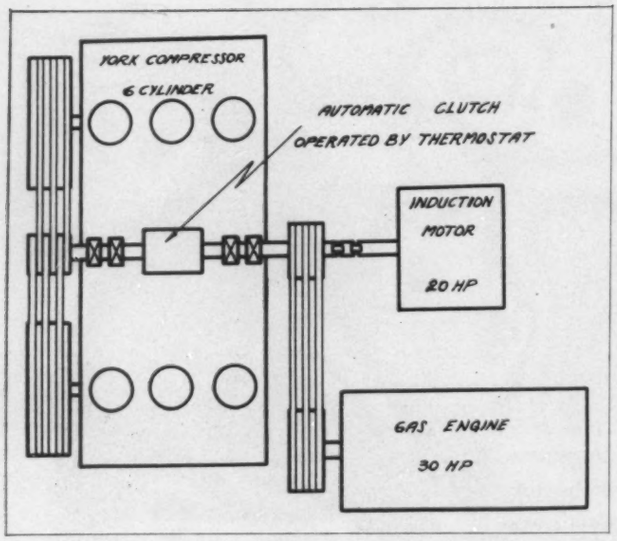


FIG. 5
An adaptation of this gas engine load building scheme to conversion of air conditioning load permitting use of gas engine and motor throughout the entire year.

BUILDING LOAD WITH GAS ENGINES

(Continued from Page 16)

The customer makes a greater saving per dollar of investment than can be made through any other plan for several reasons. First, he can install and use an engine approximately twice as large as would be possible if only the mechanical load were considered. He installs an engine capable of delivering this mechanical load plus an electric load equal to the capacity of the motor as a generator. His initial cost per horse power is reduced.

This initial investment per horse power is further reduced because he need not apply a safety factor for possible overloads. The electrical system cushions this. Also, in most cases he needs just a simple gas engine without starting equipment, clutch or other auxiliaries.

He makes an operating saving because in the normal application, he is operating always at constant full load. Let the mechanical load drop off and our system reaches out and takes a compensating electrical load. Let the mechanical load pick up and we drop an exactly equal electrical load; and we do this literally at lightning speed, and with no control devices. The control is inherent in the system itself. It involves only very slight change in speed. Further than this there is no problem of accelleration to impose its penalty of higher fuel costs. Should anything occur to cause the engine to attempt to run away, we have perfect braking applied through the generator, where an increase of only a few r.p.m. absorbs an appreciable quantity of energy putting it to useful work within the customers system at a substantial saving to him. This fact of constant full load operation, for most installations, will bring to an operating reality the best economies that manufacturers can build into engines.

Existing Equipment Undisturbed

A further advantage is that we don't disturb, remove, or replace any existing equipment, we merely supplement it. There is still an electric motor connected to the load and hooked up with central station service. If the gas engine fails the wheels keep turning just the same. If automatic controls are installed, we don't disturb them. Without touching them, we may apply them to our engine through the motor. We eliminate the fear, warranted in the customer's mind, of cutting away from utility service and we don't introduce line shafts, at least not mechanical line shafts. Perhaps it is proper to consider that we have introduced a flexible electrical line shaft into the gas engine picture.

This system usually gives the customer the further advantage of protection in the case of prolonged power failure, for certain loads which it is essential to keep operating. We can arrange to continue with the mechanical load to which we are directly connected. This is important if it be a refrigerating load, or a gas or air compressor, or a blower for supplying combustion air to furnaces, and in many other cases.

As a result of all of this, it expands our market possibilities tremendously. Where else will you find a practical and economical plan for entering the combined field of commercial refrigeration and auxiliary power and lighting? Where else can you find a plan that offers the possibilities that this one does in its application to air conditioning? Commercial air conditioning is an expensive necessity, particularly up here in the northern section of the country. It involves the installation of expensive equipment which is used but few hours per year. It involves large sized motors imposing a heavy demand charge. Yet even when a gas engine is substituted, high fixed charges are involved which require more constant year round operation than is usually possible, in order to bring down unit costs. This plan is flexible enough to permit solving this problem. Shortly we will be making such an installation which will permit the use of the motor and of the gas engine for a minimum of 300 hours during each of the 12 months of the year. The motor will be operated from the engine for 12 hours per day and about 25 days per month. When cooling is required the thermostat operating through an automatic clutch, will throw in the compressor.

Ever since we first considered this plan, new applications for its use have continued to occur to us. We hesitate to make any estimate of its ultimate possibilities. Nearly every industrial plant will provide one application or more often running into sizable revenue. In each plant there will be a point beyond which it is not economical to go; but this point will seldom be reached through a single installation.

Summer air conditioning offers a wonderful opportunity for increasing our load. This plan is made to order for conversions.

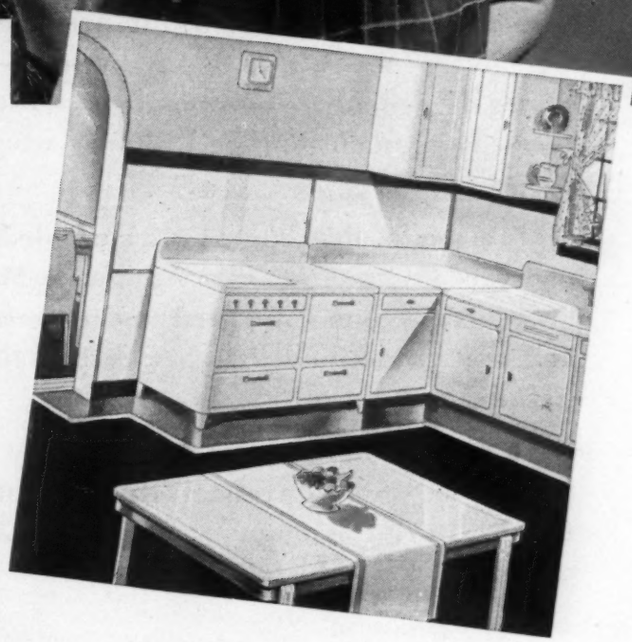
Loads similar to the grocery store installation, involving commercial refrigeration and a share of commercial lighting, offer in the aggregate a tremendous opportunity. This group includes besides groceries and meat markets, florists, restaurants, hotels, bakeries. (See Table No. 1.)

Finally, and perhaps most important of all: this idea is new, it is intriguing. I have never talked to anyone about this who was not interested in it. Through this idea you can talk gas engines to people who otherwise wouldn't listen to you.

■ "Yes, it's true, Madam—that some other appliance will do the work—but what will it look like in a couple of years or so?

"The first thing you want in your kitchen is cleanliness and complete sanitation. Then you want it attractive. Madam, the only finish that will never fade—never lose its lustre — never mar under household usage, is porcelain enamel. If your appliance is porcelain enameled—who cares if friend husband thoughtlessly leaves a lighted cigarette stub around. It will never stain or be a perpetual eye-sore to porcelain enamel. You can clean porcelain enamel, *easily,* with soap and water—and you can do it from now until Kingdom come—and it will never dull its original lustre.

"Madam—even when porcelain enamel does cost a trifle more the slight differential means years and years of pride and satisfaction to you."



EDUCATIONAL BUREAU
PORCELAIN ENAMEL INSTITUTE, Inc.
612 North Michigan Avenue
Chicago

DURABILITY PORCELAIN ENAMEL

PORCELAIN ENAMEL THE *Lifetime* Finish.

The Makers of

BARBER BURNERS

Renew a

PLEDGE *of* SERVICE

To the Industry

FOR nearly 20 years Barber Gas Burners have led the field. During this period other gas burners have come and gone—but Barber has maintained an impressive record on the one test that governs the success of any burner—PERFORMANCE! Untold labors of patient development, under the hands of skilled engineers, have made Barber Products what they are today. That is Progress.

We take this opportunity of pledging to the Heating Industry, Gas Companies, Gas Appliance Manufacturers, and the public generally our continued and increasing cooperation—to the end that traditional "Barber Satisfaction" may have a still wider significance.

Barber designs and builds many types of Burner Units for Gas Appliances, Conversion Burners for Furnaces and Boilers, and Gas Pressure Regulators. Write for Complete Illustrated Catalog and latest Price List.

●

THE BARBER GAS BURNER COMPANY

H. M. MANSFIELD, *President*

3704 Superior Avenue
Cleveland, Ohio

Address Michigan Inquiries to
The Barber Gas Burner Company of Michigan
4475 Cass Ave., Detroit, Michigan

Industry Will Have Building Exhibit at N. Y. Fair

The gas industry will have its own building and exhibit at the New York World's Fair of 1939. This announcement followed official approval by the Executive Board of the American Gas Association and the Board of Directors of the Association of Gas Appliance and Equipment Manufacturers.

H. H. Cuthrell, of Brooklyn, N. Y., vice-president of The Brooklyn Union Gas Co., is chairman of the Committee on New York World's Fair—1939.

The last national exhibit of the gas industry was at the Century of Progress Exposition, Chicago, 1933-1935.

The Administration Building now in course of construction on the Fair grounds will be fully gas equipped, according to latest reports from officials. Four Bryant boilers and one Bryant space heater have been ordered to take care of the heating requirements of the Administration Building. Five Ruud water heaters have also been ordered to supply hot water requirements. The giant kitchen to be installed in the Administration Building and operated by a concessionaire will be gas equipped.

Specifications just completed for the Field House and the Boat House provide that both be heated by gas and that gas be used to supply hot water.

■ ■

A.G.A. Laboratories Appoints Mrs. Stanyon Home Economist

Gertrude J. Stanyon, recently appointed home economist for the American Gas Association Testing Laboratories, assumed her duties in Cleveland, Ohio, on June 7. Her work will be concerned with bringing the Laboratories into closer contact with the viewpoints of consumers and home economists in its standardization work and certain of its research activities in domestic gas utilization, establishing closer cooperation with the home service branches of the industry, and assisting in solving many requirements research problems and other matters wherein a women's point of view would be helpful.

GERTRUDE STANYON

Mrs. Stanyon received her Bachelor of Science degree in home economics from The Stout Institute, Menominie, Wis., and has done graduate work at the University of Minnesota and at Columbia Hospital in Milwaukee. She supervised day school and adult homemaking in Wisconsin schools for seven years.

■ ■

Alexander Accepts Executive Posts with British Utilities

J. R. W. Alexander, M. A., LL.B., F.C.I.S., has resigned as secretary of the Institution of Gas Engineers, England, to accept the position of general manager of Associated Gas and Water Undertakings, Ltd., and general manager of the East Surrey Gas Co. The appointment is effective June 21.

Mr. Alexander has been secretary of the Institution of Gas Engineers since 1929 when this organization, now 74 years old, was granted a royal charter. He took over the reorganization and extension of the work of the institute, and has been prominently identified with the British gas industry. In 1933 he organized and headed a group of Institution members on a visit to the United States and the A. G. A. convention.

W. H. Bennet, M. Inst. Gas E. is resigning as managing director of the East Surrey Gas Co. in order to give more time to his duties with the Associated Gas and Water Undertakings, Ltd. Mr. Bennet will continue as deputy chairman of the company and consultant.

The Associated Gas and Water Undertakings, Ltd., has fourteen public utilities connected with it.

■ ■

Harry M. Mansfield Elected Head of Barber Gas Burner

Harry M. Mansfield, formerly secretary of the Barber Gas Burner Co., Cleveland, Ohio, has been elected president of the company. Action was taken by the board of directors on June 5, following the death on May 7 of Harry E. Kerr, founder and president of the company for 19 years, and a pioneer in the development of conversion gas burners and their application to coal fired heating appliances.

H. M. MANSFIELD

Mr. Mansfield has taken an active part in the management of the company during Mr. Kerr's last illness of more than a year.

■ ■

Indiana Association Holds Utilization Conference

A gas utilization short course, sponsored by the Indiana Gas Association, was held at Purdue University on May 19 and 20. Those attending included key men from the customers' service and utilization departments of Indiana gas utilities.

Lecture material included the use of instruments for the setting of burners and the solution of problems in the installation, operation, and maintenance of gas appliances. Both lectures and discussions brought out that gas utilization principles are a valuable guide in meeting these problems.

Several speakers stressed points which would be of value in organizing and conducting gas company service schools.

Manufacturers' representatives, members of the University staff, and employees of the local gas company cooperated in presenting the lectures.

■ ■

P. G. and E. Raises Payroll

Pay increases totaling $1,250,000 have been approved for employees of the Pacific Gas and Electric Co., San Francisco, Calif., who receive less than $300 a month. Weekly salaried employees will get a $2 increase a week; monthly employees, $9 a month.

J. R. COLE

L. L. BAXTER

Baxter, Cole Vice-Presidents Of Southern Union Properties

L. L. Baxter, division manager at Fayetteville, Ark., of the Arkansas Western Gas Co., was recently elected a vice-president of the company, according to C. H. Zachry, vice-president and treasurer of Southern Union Gas Co., the parent company.

Mr. Baxter entered the employ of Southern Union in 1932. Prior to that time he was with the Pittsburgh Water Heater Co. of Texas, and from 1928 to 1932 was manager of the Dallas branch. He attended the University of Texas. He is chairman of the Southern-Southwestern Sales Conference for 1937-38.

J. R. Cole, who has been with Southern Union Gas Co. since 1933, has been elected a director and vice-president of the New Mexico Gas Co., another subsidiary. Mr. Cole is operating manager of the New Mexico Gas Co., Pecos Valley Gas Co., The Gas Co. of New Mexico, and Southern Union Gas Co. (West Texas properties).

■ ■

Three of Houston Natural's Companies Extend Lines

Three Houston Natural Gas System subsidiaries recently made short extensions to their distribution systems.

Gulf Cities Natural Gas Co., Houston, Texas, brought gas to League City from Dickinson with the laying of three miles of 2-inch line. Texas Natural Gas Utilities Co., Houston, tapped the Houston Pipe Line Co.'s main line with a one-and-a-half-mile length of 2-inch pipe to bring gas to Pearland. To supplement the supply to Kingsville, the Tex-Mex Natural Gas Co., Houston, added seven miles of 4-inch and 6-inch line from Bishop to Kingsville, carrying gas from the Driscoll field.

In making connections for these new lines, Mueller high pressure tapping units were used to enable connections to be made without shutting down line pressures or interrupting flow.

■ ■

A. G. A. Proceedings for 1936 May Be Ordered Now

The 1936 American Gas Association Proceedings, which records the eighteenth annual convention of the A.G.A., has been published and is now ready for distribution. The papers cover the Natural Gas Department and the General, Accounting, Commercial, Industrial Gas and Technical Sections.

The book runs to 871 pages, each indexed for contents, subject, and author. Price to members of A. G. A. is $3.00, to non-members, $7.00.

SALES SLANTS

A month by month presentation of experiences on the sales front.

A PROSPECT'S EACH NEED FIGHTS THE GAS APPLIANCE SALE

JOHN WESTBROOK is a typical prospect for gas appliances. He lives in a small town and he is buying his home. His wife is a thrifty woman. His three children are of school age.

John Westbrook faces a complex problem. It had its beginning in 1931, when both he and his wife decided that the house needed new paint. At that time, John's salary allowed a good margin over day-to-day living expenses. But times were getting hard and the firm that employed John was forced to reduce expenses—salaries included. The paint job John planned had to be put out of mind.

The next year, the need for a paint job was even more pressing. Added to that was the need for a new car. The old one had begun to fail. John was forced to decide that neither of these needs could be satisfied. This decision was repeated the next year and the next, and still again in 1935. In the meantime, other needs were added—new furniture, a new bath tub, and other things were called for.

Paralleling these needs each year, was the inefficiency of the old gas range and the necessity for a more efficient hot water heater and refrigerator to fit the demands of a growing family.

Now John has a salary increase and he has had for some months. Again he makes a good margin over day-to-day living expenses. But with his salary increase has come a complex problem. John's needs are many and some are pressing. He cannot satisfy them all at one time.

If John and his wife decide that the paint job must have attention before the gas refrigerator is purchased, some gas appliance merchant has lost that prospect for several years to come, just as completely as though John had purchased a competitive refrigerator. The same goes for the modern gas range and the automatic gas water heater.

Obviously, John and his wife must have your help, if they are to make the right decision. The chances are that both know the need for the merchandise you have to sell. But do they know the gravity of that need?

You can help them! The modern gas range, the automatic gas water heater, the gas refrigerator, affect the success as well as the health of John Westbrook's family, affect it vitally.

Assume nothing! Don't leave John and his wife until you are convinced that both fully appreciate the importance of gas appliances to their home life.

■ ■

"Born" Salesman is Usually the "Trained" Salesman

HOW many potential star salesmen have you allowed to slip through your fingers? Some thoughts expressed by a sales manager with a successful record of making producers out of raw recruits, prompts that opening question. The sales manager's conversation ran as follows:

"We often hear the expression as applied to some person, 'He is a natural born salesman.' It is harmless enough as generally used, but dangerous when a sales manager allows himself to be fooled by it.

"There is no such thing a 'a natural born salesman.' Some people are smarter than others and stand a fine chance of becoming good salesman. In that sense, heritage has favored them.

"The selling profession needs smart men and a sales manager is fortunate when he gets them. But it does not follow that a man is a salesman because he is smart.

"If a man, starting out on the sales force, meets with more than average success in the beginning, the sales manager should take it as an indication, not that the man is born for the job, but that he deserves and will return in profit all the time and attention the sales manager can give to train him efficiently for the job.

"A young man with all the attributes of a good salesman is more or less rare. If a sales manager allows such a man to fail by neglecting to give him the time and attention necessary to his proper development, what chance does he have of building an effective sales force out of average men?

"The policy followed by some college professors I have heard about is one to be highly commended. When a smart young man is spotted in the class, he gets more consideration than is normally given to a student. He is not pulled down to the level of the average classman; he is pushed upward.

"There are not enough good salesmen, and it is doubtful that there ever will be. Every time a sales manager misses a chance to add another star performer to his force, he has simply retarded his own progress to that extent."

■ ■

New Englanders Hear Borden and Busse on Selling

Professors Richard C. Borden and Alvin Busse, sales authorities, addressed The New England Gas Association recently at the Chamber of Commerce Building, Boston, Mass., on the subject, "How to Make a Sales Presentation Stay Presented." Ten water heater manufacturers joined with the Association's sales division directors to make possible the presentation of these nationally known men. Professor Borden is sales manager of the Borden Milk Co. and a former professor of marketing, New York University. Professor Busse is executive chairman, department of public speaking, New York University.

Other speakers at the meeting, which included dinner, were Cyrus Barnes, chairman, sales division, and H. N. Ramsey, vice-chairman, A. G. A. water heater committee and chairman of the water heater division of the A. G. A. E. M.

■ ■

Harrisburg Gas Co. School Draws 6000 Women

Six thousand women attended the four-day cooking school sponsored by the Harrisburg Gas Co., Harrisburg Pa., for the *Patriot-Evening News*. Mrs. Nancy Rowe, nationally known expert, assisted by Miss Elizabeth M. Heldt, home service director of the gas company, conducted the school.

Kansas Public Service Co. Uses Back of Bill for Advertising

Back-of-the-bill advertising has proved to be an effective means of advertising for Kansas Public Service Co., Lawrence, Kan., according to C. J. Dodds, manager, and John T. Andrews, commercial manager. In this way, they say, the company can state the exact point it wishes to make and place the message directly in the hands of *every* gas customer. It eliminates the chance that the message will be discarded in the wastebasket before it is read, and also permits seasonal changes.

Monthly bills are delivered by company employees.

The advertisement is usually in two colors, and is so designed that an essential message is left on the part of the bill retained by the customer (which is his receipt) after the stub is cut off. Colors are changed each month. The additional color costs the company an average of $1 a month per thousand more than a single color, and is considered well worth the extra charge.

Advertising departments of manufacturing firms whose merchandise the Kansas Public Service Co. carries often supply cuts and layout to supplement the copy having a local tie-up.

■ ■

Gas Industry Cooperates with Builders in New Drive

A special campaign will be conducted this year throughout the United States by the American Gas Association to install gas appliances in both new and old homes. The program will be carried out in co-operation with gas companies, gas equipment manufacturers, and manufacturers of building materials. Gas equipped model homes will be constructed, in co-operation with local architects and builders, thus enabling home owners to see modern appliances in operation.

Assistance will be given by gas men to architects and builders concerning installation. All home building prospects will be referred to local architects and contractors.

J. F. Quinlan is in charge of the campaign. He was once manager of the New American home building demonstration.

■ ■

United Gas System Prepares Kitchen Planning Manual

A manual, "The Planned Kitchen," has been prepared by United Gas System, Houston, Texas, for use by dealers in its territory. The manual shows how to plan a kitchen around three units: the preparation center, the storage center, and the cleaning center. Eight pages are devoted to basic designs. The remaining pages give instructions for selecting color schemes and arranging equipment. The books are distributed by the various local companies in United Gas System.

■ ■

T. Aoki Given Appointment

Tetsuji Aoki, superintendent of the Shinkyo Works of the South Manchuria Gas Co., who recently visited many gas companies in the United States during a world tour of the gas industry, has been appointed superintendent of the Dairen gas works.

KNOXVILLE CO. WARRANTY PLAN BOOSTS GAS RANGE SALES

THE Knoxville Gas Co., Knoxville, Tenn., is now offering a 5-year Warranty plan applicable on modern gas ranges, according to word received from C. W. Gale, new business manager of the company. The warranty is offered for $1.50 or 30 cents per year.

In consideration for this amount, the company agrees to maintain a new gas range for five years. This includes the items of labor and materials in the replacement of parts and all adjustments or routine service calls. The warranty does not cover damage to the enamel or impaired finish on any part of the range, and accidental breakage is also excepted.

Through this plan the company hopes to drive home to prospective customers the low cost of maintaining a gas range as compared with coal, oil, and electric ranges.

The warranty, according to Mr. Gale, has been an effective weapon in subduing competition. Engraved certificates are presented to each purchaser of a warranty.

Among other sales activities of the Knoxville company was the recent successful completion of a two-months automatic storage system campaign. In conducting the campaign, the company used a picked mailing list for circularizing, a special personal letter, and intensive territory solicitation. Newspaper advertising and the employee tip bonus system were important factors in the campaign. Automatic storage system saturation is at the present time approximately 35 per cent of the company's domestic meters.

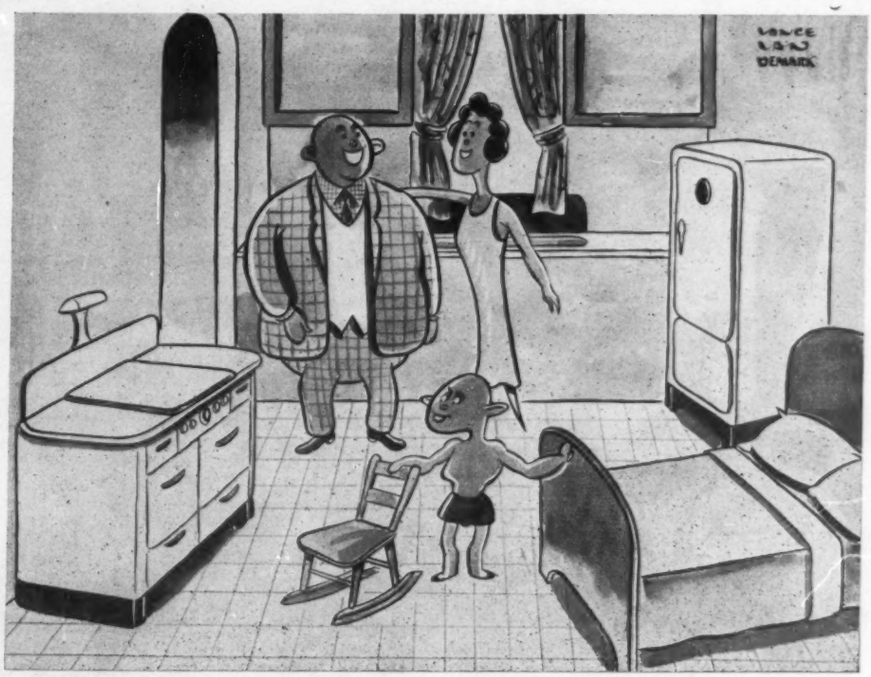
■ ■

Peoples Gas Light and Coke Opens Children's Classes

A children's cooking school will be opened on July 6, 7, and 8 by The Peoples Gas Light and Coke Co., Chicago, Ill., to continue for six weeks. Children of all ages may attend, even youngsters just learning to read, and both boys and girls are welcome. There is no charge.

Classes will be conducted weekly in the auditorium of the main office and at two branch auditoriums by the home service department.

LITTLE NAT — **By Vance Van Demark**



"He says of course he knows what he's doing—he's moving into the kitchen for the summer, 'cause it's so cool!"

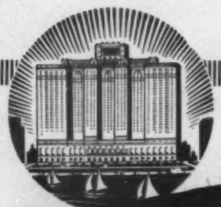
CHECK YOUR HEAT, SIR?

How comforting to step out of tiring heat into the reinvigorating coolness of the Stevens! By the time you've reached your room, you'll begin to live again. A cold, bracing shower, a change of linen, and so to dinner—in any one of the four inviting, delightfully air-cooled dining rooms of this great friendly hotel.

Your Stevens night-time rest is well protected, too. Blistered, work-day nerves relax and go to sleep in cooling comfort. When another day arrives you will awake refreshed, alive again and ready for it.

Stay at the Stevens—get an air-conditioned room and LIVE this summer.

OTTO K. EITEL
Managing Director



STEVENS
America's Grand Hotel
CHICAGO

Cities Service 1936 Sales Reach All Time Record

Total natural gas sales of subsidiaries of Cities Service Co. during 1936 were in excess of 156 billion cu. ft., largest in the company's history, according to a report recently issued. They were 20 per cent greater than 1935 natural gas sales. The company report attributes this to increased industrial and house-heating sales, brought about by sales promotion activities and favorable weather conditions.

The natural gas subsidiaries increased their sales of gas consuming appliances and apparatus 33 per cent over 1935. The sales totalled $5,000,000 and included 7800 house-heating furnaces and burners, 15,000 gas heaters, and more than 17,000 gas ranges. The subsidiaries added 13,000 customers during 1936, including 2300 through acquisition of the distribution system at St. Thomas, Ont.

Average rates declined in all classes of natural gas sales.

■ ■

Summersby General Sales Manager of Pump Company

J. J. SUMMERSBY

Appointment of J. J. Summersby, assistant vice-president of Worthington Pump and Machinery Corp., as general sales manager of that corporation is announced. This appointment is an extension of Mr. Summersby's previous responsibilities, for a further concentration of direction of the general sales department.

Mr. Summersby joined Worthington as a sales engineer immediately after his completion of post-graduate work at Washington University in 1920, and has been continuously identified with the corporation since then as district sales manager, divisional sales manager, and assistant general sales manager.

■ ■

F. F. Doyle of P. G. and E. Ends 6000-Mile Air Trip

F. F. Doyle, manager Natural Gas Division, Pacific Gas and Electric Co., San Francisco, returned early in June from an extended trip throughout the East, during which he traveled by airplane more than 6000 miles.

While the primary objective of the trip was the convention of the Natural Gas Department of the American Gas Association at Kansas City, the combined business and pleasure trip also included New York and Pittsburgh.

■ ■

A. G. A. at Paris Meeting

At the meeting of the International Gas Union held in Paris, France, June 12-16, the reports of the several standing committees, on which the American Gas Association is represented, were presented. Alexander Forward, managing director, represented the American Gas Association.

D. C. Bakewell Resigns to Take Post with Blaw-Knox

Donald C. Bakewell has been appointed special representative of the Blaw-Knox Co., with headquarters in the executive offices at Pittsburgh, Pa. Since 1930 he has been vice-president and chairman of the executive committee of the Continental Roll and Steel Foundry Co., and still retains the posts of vice-president and member of the executive committee of the Illinois Zinc Co., director of E. H. Jennings Bros. Co., as well as other positions.

D. C. BAKEWELL

Mr. Bakewell is a graduate of Yale University. After two years' postgraduate work at Massachusetts Institute of Technology, he was a special apprentice for the Pennsylvania Railroad at Altoona, Pa. From 1911 to 1917, he was connected with the Duquesne Steel Foundry Co. as machinist, tool maker, assistant superintendent, assistant secretary, and secretary. In 1917, Mr. Bakewell was made president of this company and served in that capacity until the merger with Continental Roll and Steel Foundry Co. in 1930.

■ ■

Porcelain Enamel Acid Test Now Available

A new publication has been issued by the Porcelain Enamel Institute, known as "Test for Acid Resistance of Porcelain Enamels." It was prepared under the direction of the Institute's committee on test standardization, of which W. N. Harrison of the National Bureau of Standards, is chairman.

The test, which has been in the course of preparation for the last year or more, is termed as a "tentative standard" and will continue in its present form until it is supplanted by a standard test for acid resistance.

Described in the new publication are the "room temperature test" and "boiling test." Complete instructions are given under each classification for simple methods of determining the acid resistance of porcelain enamels. Copies of the test may be obtained from the Porcelain Enamel Institute, 612 No. Michigan Ave., Chicago.

■ ■

Grand Rapids Cooking Show Attracts Crowd of 5,500

Fifty-five hundred persons paid 10 cents admission to watch Barbara Jenkins, child cooking star, and E. Carl Sorby demonstrate at the cooking show presented by Grand Rapids Gas Light Co., Grand Rapids, Mich. The proceeds were given to charity.

Six-year-old Barbara prepared seven different dishes on two full-sized modern gas ranges, according to Wallace M. Chamberlain, assistant sales manager in charge of domestic sales. Mr. Sorby of the George D. Roper Corp. gave a demonstration on waterless cooking. A gas range was given away. Entertainment also included a 10-piece orchestra and a magician act.

COOPERATIVE LOAD BUILDING

P. C. G. A.

BULLETINS

COMMITTEE
A. C. JOY, (P. G. & E.)
Chairman
FORREST RAYMOND
(San Diego Cons. G. & E. Co.)

COMMITTEE
J. S. SPAULDING
(So. Calif. Gas Co.)
CLIFFORD JOHNSTONE
Managing Director
Pacific Coast Gas Association

Posed by the "Jones Family" with Jed Prouty in the role of Father, Spring Byington, Kenneth Howell, Shirley Deane, June Carlson, Florence Roberts and George Ernest. Courtesy Twentieth Century-Fox Studios.

MORE impulsive than tactful (Mother prided herself on her cookery even with the old stove)—still, Dad's tribute is from the heart, and echoed by the whole family. ☆ Similar scenes are occurring in thousands of homes—*including your neighbors.* Inquire of your friends who have new gas ranges. You'll find them all enthusiastic. Delighted by new delicacy and flavor in old, familiar dishes. Inspired to try new recipes. Sure of success *every time.* Enjoying daily compliments.

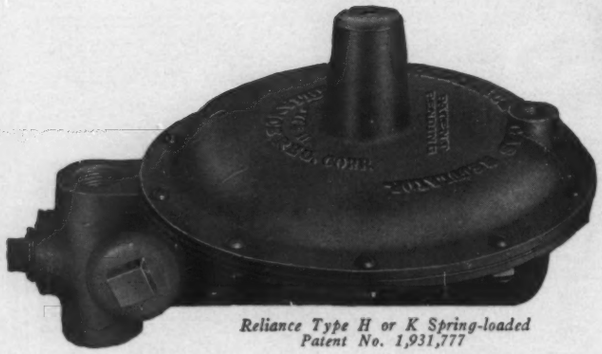
☆ You too will be happy with a modern gas range—*it's a promise.* You'll thrill to the heat-sealed oven with automatic temperature and time-controls, and new low-temperature cooking—the self lighting combination speed and simmer burners—perfected smokeless broiler—convenient table top—streamline beauty—countless other features awaiting your discovery. ☆ Ownership is made easy by the friendliest of terms—offered by your Gas Company or Appliance Dealer.

Gas THE MODERN FUEL

SPEED! GAS IS THE ONLY COOKING FUEL THAT ATTAINS FULL HEAT INSTANTLY

COOKING • HOT WATER • REFRIGERATION • HEATING

DOMESTIC
Advertisement
featuring the
"JONES FAMILY"
of the Movies
☆
300,000 Copies
Nearly
1,000,000
Readers!



Reliance Type H or K Spring-loaded
Patent No. 1,931,777

Reliance Type H or K Dead-weight

Positive Control of Service Pressures

Reliance Type "H" and "K" Regulators have all these desirable features: sensitive pressure regulation; positive lock-up when consumption stops; minimum pressure loss in the Regulator; large flow capacity; rugged construction and long life.

Specially designed toggle action gives a longer and more powerful thrust on valve seat and results in lower lock-up pressures. Valve seats can be removed or changed in size without disassembling the Regulator. Diaphragms can be furnished in leather or composition. Made in 8 sizes, from ¾" to 2"; spring or weight loaded; fully described in Bulletin No. 38.

Reliance Regulators are made in complete lines for domestic, district and industrial purposes, for natural, manufactured, butane, propane and liquid petroleum gases.

Embodying refined engineering principles and the latest features in design, these Regulators have fully demonstrated that they have a better performance record, larger capacity and lower lock-up pressures than any other regulator of the same size and type. They are made with or without mercury seal attached and can be supplied with internal mechanical relief where desired. Valve seats can be renewed or changed as to size simply by removing end plug and inserting a hexagon wrench into the recess in the valve seat body. The valves are very accessible. A plug is provided in the side of the Regulator for quick inspection; and if necessary, the valve seat disc can be removed and the valve seat cleaned, returning the Regulator to service in minimum time.

A standard pipe plug on the high pressure side of the Regulator permits the attachment of a gauge for taking service pressures, and service lines can be blown free of dirt, scale, etc., through this opening. In distribution systems where dust troubles exist, the type "H" Regulator is extremely economical. Valves can be changed and dust blown out in a short time; it is seldom necessary to remove the Regulator from the line and take it to the shop for repairs. Where the side inlet is used for service connection, the bottom connection, when plugged, acts as an accumulation reservoir for dust and dirt. All Reliance Regulators are made from special alloyed castings with unexcelled qualities.

Reliance Regulator Corp.

Send for Bulletin No. 38

1000 MERIDIAN AVENUE ALHAMBRA, CALIFORNIA

RELIANCE REGULATORS

Steam Measurement By Orifice Meter

By P. W. HILL

Superintendent of Measurement, General Petroleum Corporation*

STEAM is a commonly-used, convenient means for the transfer of heat and power. It is customarily generated by the burning of some fuel under boilers and is transported to the point of utilization through pipe lines. Thus it becomes appropriate to measure steam in the pipe by means of the orifice meter.

P. W. HILL

In certain cases we wish to measure and control the steam rate into a process, such as steam distillation, but by far the most important function of the steam meter is to furnish information which leads to economy. We install a steam meter at the boiler to enable us to determine the efficient use of fuel and we use meters measuring steam to the various pieces of equipment so that we may be sure of efficient operation. If we know how much steam is being used and where it is used, we are provided with information without which we would be seriously hampered in our attempts to promote operating economies.

Energy in the form of steam becomes valuable and elusive so that it behooves us to pay perhaps even more attention to the accurate measurement of steam than to the gas from which it is generated.

In this discussion, let us assume that a knowledge is had of measurement, by orifice meter, of fluids in general and concentrate on those differences encountered in the measurement of steam.

First, let us consider the primary device or the orifice, the line, and the pressure taps. Means should be provided to prevent the accumulation of condensed water at the plate. This may take the form of a piped seal of greater length than the differential range of the meter or a small hole, say 3/32 of an inch, drilled at the bottom of the orifice plate to permit water to pass without appreciably affecting accuracy. The second method is perhaps preferable because pipe seals have a tendency to clog and corrode. The orifice disc may be made of bronze, steel, monel, or stainless steel. Stainless steel resists both corrosion and erosion. The device to hold the plate in the line may be flanges, a holding ring installed between flanges, or an orifice fitting.

Pressure taps are commonly located on the side to reduce clogging from scale. It is a good idea to use a gate valve directly above the taps so that the hole may be cleaned under pressure by a rod thrust through a packing gland. The size of the tap should be as large as is consistent with good measurement, to permit the free flow of condensed water back into the line. From 5/16 to ½ inch depending on the size of the line, has been found satisfactory.

Condensation chambers are used at the line to provide a constant level of condensed water in both chambers at the same elevation above the gage. The piping between the condensate chambers and the line should be as short as possible and so arranged as to permit free drainage of condensate back to the line. The latest idea is to use a specially designed condensation chamber mounted above a tee in which the level is carried. A nipple extends from the chamber to a point just below the surface of the water. Normally the chamber remains full of water until a change in differential lowers the level and permits steam to rise into the chamber, condensing sufficient water to bring the level back to the original position. This type permits the maintenance of the proper level with a minimum of steam space, thus reducing the volume of condensate which must flow back into the line.

The condensation chambers should be provided with a valve at the top so that uncondensable gases such as air and carbon dioxide, which may be present in the steam, can be vented.

Wherever possible the recording gage should be mounted below the steam line with the connecting lines sloping continuously upward to avoid air pockets.

The differential gages are calibrated dry, that is with gas or air, and the correction factor for water over mercury is introduced in the coefficient. The range of the differential gage in inches of water should not be more than the absolute steam pressure for accurate measurement. Where the steam pressure is constant it is only necessary to have a record of the differential but when the pressure varies a static-pressure pressure spring and pan is used, which should be corrected for difference in head so that it records the pressure at the steam line.

The gage piping should include a valve on each line above the gage with a by-pass and valve to permit checking the meter. It is a good idea to have a drain valve in the by-pass with which to check to see if the lines are clear.

In calculating a coefficient for an

(Continued on Page 59)

* Presented before the Southern California Meter Association, Huntington Park, Calif., April 27, 1937.

SERIES 10 CIRCUIT

Exclusive with Minneapolis-Honeywell

ONLY Minneapolis-Honeywell can offer the control performance made possible by the exclusive Series 10 Circuit. That is one important reason why it pays to standardize on this superior line of controls. In addition your service department can operate more efficiently and will have fewer calls, and your stock room will have to handle only one line to fill all control requirements. Minneapolis-Honeywell Regulator Co., 401 East 28th Street, Minneapolis, Minn.

MINNEAPOLIS HONEYWELL

Control Systems

S. C. M. A. ELECTS J. B. TAYLOR PRESIDENT FOR 1937-38 TERM

J. B. TAYLOR, Jr., of the Signal Oil and Gas Co., Long Beach, Calif., was unanimously elected president of the Southern California Meter Association at the first annual "low-jinks" meeting held June 24 in Huntington Park, Calif. Guy Corfield, retiring president of the Association, presided at the meeting.

J. B. TAYLOR

Other officers elected were: H. A. Faull, Southern Counties Gas Co., vice-president; G. S. Duncan, General Petroleum Corp., secretary; and Ed. Valby, Richfield Oil Co., treasurer. F. E. Bradley, former president of the association, was chairman of the nominations committee.

The following men were named to serve on the board of directors and as chairman of association activities for the ensuing year: George Stevenson, Pacific Meter Works, programs; James Dunn, American Recording Chart Co., entertainment; G. H. Forster, Jr., Texas Co., publications; Ernest Adams, Pittsburgh Equitable Meter Co., membership; F. McAllister, Southern California Gas Co., bylaws; Otto F. Reinen, Jr., Del Rey Oil & Gas Co., standards. Mr. Corfield, Southern California Gas Co., as retiring president, remains on the board of directors.

A highlight on the entertainment program of the evening was the appearance of Oscar Reichow, vice-president of the Los Angeles Baseball club. Mr. Reichow gave an informative and entertaining talk, recounting some of his experiences with great ball players of the past. His lecture ended with an appraisal of the baseball situation, both nationally and on the Pacific Coast.

The program was concluded by several entertaining acts put on by professional dancers and comedians. The entertainment program was arranged by James Dunn.

■ ■

P.C.G.A. Woman's Publication Offers Biographical Note

A letter from Norman R. McKee, vice-president of the Pacific Coast Gas Association, and biographical material about Miss Mary Dillon, president of the Brooklyn Borough Gas Co., Brooklyn, N. Y., are special features of the April issue of *Public Utility Women*. issued by Pacific Coast Gas Association and edited by Doris Allen, Los Angeles Gas and Electric Corp., who is chairman of the P. C. G. A. Women's Committee.

Short autobiographical notes about women prominent in the gas industry on the Pacific Coast, suggestions for preparation of women's committee year books, and notations about current advertisements, radio programs, and motion pictures pertaining to the gas industry, round out the issue.

■ ■

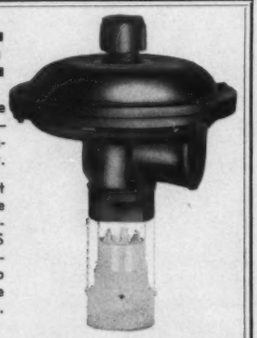
Edward Olsen Closes 64 Years

Edward Olsen, head of the meter department and of the installation and customers' service bureau of the Citizens Gas and Coke Utility, Indianapolis, Ind., recently completed his sixty-fourth year of continuous service with the organization. He is 83 years old. During his service with the utility he has seen the number of meters in Indianapolis increase from 3000 to more than 80,000.

PLAY SAFE

by protecting every service line with the new Connelly MERCURY SEAL VALVE—it's good insurance against explosion hazards, resulting from failure of gas supply.

Placed ahead of the meter, it can be set to shutoff at any minimum safe pressure or interruption of the gas supply. Mercury seals the valve closed—and it STAYS CLOSED until manually opened by an inspector—proof against tampering. Also useful for venting high pressure house governors. Sizes ¼" to 4" for pressures up to one pound. Bulletin No. 302-4 tells the story—write for your copy.



CONNELLY IRON SPONGE & GOVERNOR CO.

CHICAGO, ILL. ELIZABETH, N. J.

Pacific Coast Representative: Harry V. Payne, 3834 Third Ave., Los Angeles

AIR CONDITIONING

Electrogas

HEATING EQUIPMENT

FURNACES BLOWERS FILTERS WASHERS

Write for attractive Dealer proposition

ELECTROGAS FURNACE & MANUFACTURING CO.

2575 Bayshore Boulevard, San Francisco

New Mexico Gas Company's new neon sign

Employees of New Mexico Co. "Win" New Neon Sign

A THREE-COLOR neon sign, dedicated by New Mexico Gas Co. to its employees in Santa Fe., N. M., has been erected by the company with money won in the 1936 Golden Faucet contest sponsored by A. G. A. and co-operating manufacturers.

According to C. H. Zachry, vice-president and treasurer of New Mexico Gas Co., the company entered the water heater sales contest and the employees and salesman did the rest. The company won first place in its division, the salesman being awarded the $100 grand prize and $200 going to the company. The company used this prize money, states Mr. Zachry, to purchase the neon sign as a lasting tribute to the employees' success.

The sign is 11½ ft. high and 5 ft. wide, with an 18-inch blue flame torch on top.

Latest reports of the 1937 Golden Faucet contest show that in April New Mexico Gas Co. was again leader in its division. The company is a member of Southern Union Gas System.

■ ■

M. H. North in New Post

M. Harlow North, who has been advertising manager and assistant sales manager of the Fall River Gas Works Co., Fall River, Mass., for more than ten years, has been named to a similar position with the Blackstone Valley Gas & Electric Co., Pawtucket.

Steam Measurement by Orifice Meter

(Continued from Page 57)

orifice steam meter the following information must be available:

1. Internal pipe diameter
2. Diameter of the orifice
3. Steam pressure
4. Quality of steam or percentage of moisture as obtained by a throttling calorimeter
5. Differential pressure
6. Location of taps
7. Location of pressure connection i.e., upstream or downstream

The reading of steam meter charts is similar to the reading of any orifice meter chart. Depending on the type of record obtained and the degree of accuracy in reading required, the hourly extension method or the 24-hour average may be used.

Because steam does not follow the perfect gas laws very well, it is more accurate to use the density of the steam as obtained from the pressure record and steam tables as against using the pressure directly in the calculation.

One word of caution to meter men having the maintenance of steam meters; escaping steam is always dangerous, and more than ordinary care should be exercised in the handling of steam piping under pressure.

■ ■

Lycoming Names Moorlane Co. Tulsa Area Distributor

The Moorlane Co., Tulsa, Okla., has been appointed distributor for Lycoming natural gas engines and Lycoming natural gas engine generating units for the Tulsa territory, according to an announcement by the Lycoming Manufacturing Co.

The Moorlane Co., long identified with the oil business, will carry a full line of the Lycoming AG Series natural gas engines as well as parts.

Lycoming's natural gas engines are for oil well pumping, driving rotary and power pumps and for generating electric light and power. They are of the heavy duty type available in four, six and eight-cylinder models of which a majority of the parts of the three models are interchangeable.

■ ■

H. G. Lawrence Appointed

H. G. Lawrence has been named purchasing agent for Southern Counties Gas Co., Los Angeles, Calif. He joined the company's staff as clerk in the purchasing department ten years ago. For a year he has been assistant purchasing agent.

Nothing Ever Happens

Nothing dramatic happens—perfectly conventional routine behaviour is maintained at all times where regulators like our illustration are placed on guard. These two 14" low-pressure units are for use in a by-product coke plant. Chaplin-Fulton devices for pressure control have been known and approved over 50 years. Write for catalog, Chaplin-Fulton Manufacturing Company, 28-40 Penn Ave., Pittsburgh, Pa.

in the presence of

CHAPLIN-FULTON REGULATORS

P. G. and E. 58-MILE LINE FROM RIO VISTA TO COST $904,000

PACIFIC Gas and Electric Co., San Francisco, Calif., was granted permission by the State Railroad Commission on June 21, to invest $904,000 in pipe lines to carry natural gas from the newly developed Rio Vista fields to its distribution systems in Solano, Yolo, Marin, Sonoma, and Napa Counties.

The utility has contracted with the Amerada Petroleum Corp., lessees of the field, for an average daily delivery of 10,000,000 cu. ft. of natural gas from the Rio Vista fields.

This new natural gas field is located two miles from Rio Vista in the Montezuma Hills west of the Sacramento River. Amerada Petroleum Corp. completed its discovery well June 19, 1936, and now has six wells developed and producing. Drilling of several more wells is planned for the near future. Standard Oil Co. has one well in the vicinity. The wells, producing high heat content dry natural gas, vary in depth from 4200 to 4566 ft.

The pipe line just authorized will be in a number of sections, to extend a total of 58 miles, to serve five northern California counties. One 12-inch high-pressure line will run north from Rio Vista for a distance of six miles. From there a 10-inch line will run for 26 miles west to the Napa Y junction on the state highway in Napa County. Connection will there be made with an existing main line bringing Kettleman Hills gas through Vallejo to Petaluma across Carquinez bridge. Another 10-inch line will run from the same point 14½ miles to Dixon, to hook up with the existing Dixon-Davis 6-inch line. Another 12-inch mile link of 8-inch line from Davis will serve the Woodland area.

All towns in Solano county except Benicia and Vallejo will be served with Rio Vista natural gas. Benicia and Vallejo already are served with natural gas from the Kettleman fields.

It is expected that the new high-pressure mains will enable the utility to extend its natural gas service to areas not now served and at the same time permit conservation of Kettleman Hills gas resources.

In connection with this development, Pacific Gas and Electric Co. announces negotiations under way with Natural Gas Co. of California, subsidiary of Pacific Public Service, for acquisition of the butane gas distribution systems in Rio Vista, Fairfield, Suisun, and Vacaville, to be used for distributing the new natural gas.

■ ■

Barber-Greene Co. Names H. A. Barber Vice-President

H. A. Barber was recently made a vice-president of Barber-Greene Co., Aurora, Ill. Mr. Barber received his degree in Mechanical Engineering at the University of Illinois. He has worked in virtually every department in the factory, and has done a great amount of service work in the field, particularly on B-G Bituminous machines. His experience also includes research and engineering design.

In his new position, Mr. Barber will continue to assist his father, Mr. H. H. Barber, president of the company, in the supervision of engineering and manufacturing.

The officers of the Barber-Greene Co. are now H. H. Barber, president; W. B. Greene, vice-president and treasurer; H. A. Barber, vice-president, and D. G. McIlwraith, secretary.

■ ■

H. F. Patterson Appointed To A-B Stoves Sales Post

H. F. Patterson has joined the sales staff of A-B Stoves, Inc., Battle Creek, Mich. In his new affiliation Mr. Patterson will serve as assistant to Ross Lynn, Sales and New Business manager of the company.

Prior to his connection with the A-B Stoves, Mr. Patterson was special utility contact representative for Cribben & Sexton Co., Chicago. Before joining Cribben & Sexton in 1934, Mr. Patterson was associated with the Faraday Refrigerator Corp., Dayton, Ohio, and previous to that had been vice-president in charge of sales for Moore Bros. Co., Joliet, Ill.

■ ■

Arkansas Louisiana Line

Construction has been started on a 9-mile 6-inch line by Arkansas Louisiana Gas Co. to connect four wells in the Tate Island field approximately 15 miles northwest of Russellville, Ark. The wells, drilled and capped four years ago, are being opened now because of the increased use of gas in the territory.

ENSIGN
1911
1937
A Pioneer . . . . . and a leader in the design, development and manufacture of fine precision carburetors and fuel regulating equipment for more than a quarter of a century.
ENSIGN CARBURETOR COMPANY, Ltd.
HUNTINGTON PARK • CALIFORNIA
Branches: Chicago, Illinois; Dallas, Texas

BUTANE-PROPANE NEWS

Liquefied Petroleum Gas Industry Shows 1936 Increase Over 1935

THE market demand for liquefied petroleum gases, exclusive of exports, increased 38.8 per cent in 1936 compared with 1935, according to reports submitted to the United States Bureau of Mines, Department of the Interior. Sales of liquefied petroleum gases for domestic use, gas manufacturing, industrial fuel and chemical manufacturing, and fuel for internal-combustion engines totaled 106,652,000 gallons in 1936 compared with 76,855,000 gallons in 1935. Exports of liquefied petroleum gases increased from 4,237,000 gallons in 1935 to 4,897,000 gallons in 1936, a gain of 15.6 per cent. The market demand for propane, butane, propane-butane mixtures and pentane for the years 1930-1936 is shown on this page in Table No. 1.

A review of the market requirements for the various liquefied gases shows that sales of propane increased from 26,814,000 gallons in 1935 to 36,502,000 gallons in 1936, a gain of 36.1 per cent. Deliveries of butane, which are larger in volume than any of the other liquefied petroleum gases, increased to 47,455,000 gallons in 1936, or 39.2 per cent over the 1935 total of 34,084,000 gallons. Sales of propane-butane mixtures, ranking third in relative volume, gained 49.1 per cent in 1936. The demand for pentane in 1936 was limited to 2,575,000 gallons, a quantity only slightly above the 1935 deliveries.

The industrial use of liquefied petroleum gases totaled 47,894,000 gallons in 1935 and constituted 62.3 per cent of the market demand, while the comparative total for 1936 is 67,267,000 gallons or 63.1 per cent of all deliveries. A tabulation of sales records as reported to the Bureau of Mines, shows that the 1936 total is divided as follows: industrial fuel, 40,140,000 gallons, chemical manufacturing, 14,445,000 gallons, internal-combustion-engine fuel, 12,476,000 gallons, and miscellaneous uses, 206,000 gallons. The item covering the use of liquefied petroleum gases for motor fuel is of special interest, as it is the first time that this demand has been segregated in this annual survey.

Sales of liquefied petroleum gases for domestic or "bottled gas" purposes accounted for 28.1 per cent of the total demand in 1936. The quantity reported under this classification is 30,014,000 gallons, a gain of 40.4 per cent over 1935 deliveries. Liquefied petroleum gases purchased by gas companies showed an increase of 23.6 per cent in 1936, totaling 9,371,000 gallons compared with 7,581,000 gallons in 1935.

PROPANE for domestic use totalled 24,423,000 gallons, accounting for two-thirds of total sales in 1936. Sales of propane for industrial fuel and chemical use were reported at 11,030,000 gallons in 1936. Less than one million gallons of propane were purchased by gas manufacturing companies in 1936.

Butane is used chiefly as an industrial fuel, there being 28,553,000 gallons of butane (60.2 per cent of total deliveries) sold under this caption in 1936, including a small quantity going to chemical plants for raw material. Distributors reported that 9,622,000 gallons of butane were used as fuel in internal-combustion engines in 1936, a demand confined largely to the Pacific Coast area. Deliveries of butane to gas companies, which declined from 5,064,000 gallons in 1934 to 5,042,000 gallons in 1935, registered a gain in 1936, when a total of 6,227,000 gallons was reported under this classification. Domestic uses of butane increased over 100 per cent in 1936, showing 2,956,000 gallons compared with 1,353,000 gallons in 1935.

Propane-butane mixtures are sold largely to chemical plants for raw material and a minor quantity is consumed as industrial fuel. The domestic and gas manufacturing demand, respectively, for propane-butane mixtures was approximately two million gallons in 1936, while about 2,700,000 gallons were sold for motor fuel in the same period.

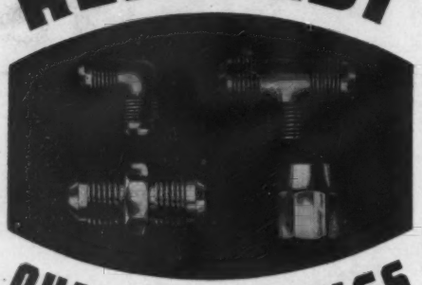
According to the American Gas Association, at the end of 1936, liquefied petroleum gas was being delivered through mains to consumers in 178 communities in 30 states by 72 companies supplying 31,300 customers. Butane-air gas with heating value ranging from 520 to 900 B.t.u. per cu. ft. was supplied to 124 com-

TABLE NO. 1. SALES OF LIQUEFIED PETROLEUM GASES, 1930-1936
(In thousands of gallons)

Year	Propane	Butane	Propane-butane mixtures	Pentane	Total
1930	11,500	....	6,517[1]	...	18,017
1931	15,000	....	13,770[1]	...	28,770
1932	15,182	14,662	3,417	854	34,115
1933	15,835	19,056	3,226	814	38,931
1934	18,681[2]	25,553	10,271[2]	1,922	56,427
1935	26,814[2]	34,084	13,492[2]	2,465	76,855
1936	36,502	47,455	20,120	2,575	106,652

[1]Butane, propane-butane mixtures and pentane.
[2]Revised figures.

KEROTEST



QUALITY FITTINGS

for every propane gas installation

Kerotest Fittings of heavy design are the work of master craftsmen and comprise a complete line of S.A.E. flare crosses, tees, elbows, unions, and nuts for your copper tube installations of propane gas.

Each one is individually inspected to insure smooth, finished seats and clean-cut threads — then individually protected by cardboard ferrules and carefully packed in strong, iron bound boxes,—your assurance of receiving them in factory-perfect condition.

KEROTEST MANUFACTURING COMPANY
PITTSBURGH, PA.

munities in 28 states by 60 companies. A mixture of undiluted butane and propane gas with a heating value of 2,800 to 3,000 B.t.u. per cu. ft. was supplied to 14 communities in California and Nevada by six companies. Undiluted propane gas with a heating value of 2,550 B.t.u. per cu. ft. was supplied to 40 communities in Maryland, Minnesota, New Jersey, North Dakota, Virginia and Wisconsin by six companies.

■ ■

N.B.G.A. Offers List of A.G.A. Approved Appliances

The National Bottled Gas Association in a recent bulletin issued a list of ranges, space heaters, water heaters, and refrigerators with American Gas Association propane approval as of February 1, 1937. According to the bulletin, every member of the N.B.G.A. is urged to adopt the policy of installing and servicing only such appliances as have been tested and approved by the A.G.A. Laboratories. Copies of this bulletin will be furnished to members upon request.

■ ■

Farrand of Gas Works Dies

William Lees Farrand, since 1928 supervisor of the hotel and restaurant division, the Philadelphia Gas Works, Philadelphia, Pa., died recently at his home in Foxborough. He was first employed by the company in 1907. In 1924 he rejoined the company as sales representative.

Bottled Gas Company Serves Seven Iowa Towns

THE Iowa communities of Bedford, Villisca, Blanchard, College Springs, Grant, and Elliot are served with bottled gas by the recently incorporated Liquefied Natural Gas Corp., which maintains its general office at Clarinda, Iowa, and division offices at each county seat town fully equipped for sales, installations, and servicing. Each division office carries bottles for servicing and is responsible for the development and operation of all towns in the county.

Underground metered system storage tanks of 42 gallons—or larger, as needed —are used. Tank trucks are not used. Meters are metric 3200 to 524 equivalent reading indexes.

Some wholesale business is conducted by the general office.

E. D. Morris is president and general manager of Liquefied Natural Gas Corp. He has had 9 years of experience in butane gas plant construction and operation. Leo R. Miller, with 14 years in the gas industry as service superintendent and manager of gas properties, is general superintendent. Sales manager is Orval Hoyle, who for seven years has been in sales promotion work on gas properties. Officers and directors, besides President Morris, are A. L. Kelley, vice-president; Clinton Turner, secretary; C. E. Hoskinson, treasurer, and Charles Hutchings, chairman of the executive committee.

■ ■

Consumers Power Co. Elects A. J. Mayotte Secretary

Archie J. Mayotte, since 1924 assistant secretary of Consumers Power Co., Jackson, Mich., has been elected secretary of the company to succeed the late Robert Davey.

Mr. Mayotte entered the public utility field in the accounting departments of the Houghton County Electric Light and the Houghton County Traction Companies. For six years he served with the Michigan Naval Brigade, rising to the rank of chief yeoman of the Second Division.

In 1917 Mr. Mayotte joined Consumers Power Co. as auditor of disbursements, successively serving as general bookkeeper, chief clerk of the general accounting department and assistant secretary in charge of general accounting. He was assistant secretary for thirteen years.

■ ■

North Shore Gas Co. Scores With "Vacation Special"

North Shore Gas Co., Chicago, Ill., conducted a "Vacation Special" campaign during April, May and June. April was the largest month in the history of the company in units and dollars of sales. Total volume was more than $56,000.

The company serves 26,000 meters in Highland Park, Lake Forest, Libertyville, Waukegan, and Winnetka. H. S. Oyen is commercial manager of the William A. Baehr organization, which has charge of operating the property. George C. Klopf is sales manager of North Shore Gas Co. Bozell & Jacobs handles the advertising for the company.

The SUPPLEMENT to the Handbook Butane-Propane Gases (2nd edition)..

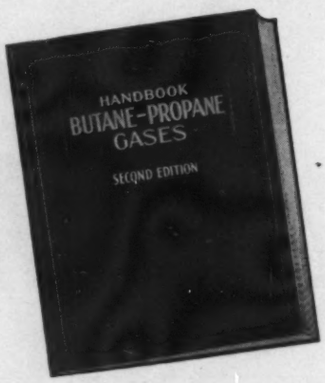
$1.00 Per Copy

A record of the past two years of progress in the *Liquefied Petroleum Gas Industry* published March 1937.

HANDBOOK
BUTANE
PROPANE
GASES

SECOND EDITION
375 pages

$5.00 per copy, plus postage



CONTENTS: Use in internal combustion engines: Design & Installation of Storage: Supply from Petroleum Refineries: Engineering Data on the Lower Olefins: Domestic Appliance Testing and Utilization: Economical Comparisons with Coal, Oil, Electricity, Producer Gas, Manufactured Gas: Town Plants: Manufacture from Natural Gas: Special Uses: Volume Correction Factors: Supplements & Revisions: Transportation: Use with other Gases: Analysis & Testing: Properties of Mixtures: Bottled Gas Distribution: Bibliography: Central Plant Directory: Catalogue Section.

2nd Edition Handbook...$5.00
2nd Edition Supplement..$1.00
BOTH NOW **$5.00** plus postage

We pay the postage on orders accompanied by remittance.

Published by publishers of OIL & GAS Equipment Review

GAS
The NATURAL Gas Magazine

810 S. Spring St.
Los Angeles, Calif.

Bupane Gas Co. Serves 10,000 Homes in 12 States

TWO million pounds of propane are distributed annually to 10,000 homes in the Middle West by the Bupane Gas Company, Cedar Rapids, Iowa, which started as a $12, one-man business only four and a half years ago in the depths of the depression. Otto A. Kohl, graduate of Cornell College and a former teacher, is the founder of this company, which, directly or through dealers, serves Iowa, Illinois, and ten other middle west states as far west as Colorado.

The company has distributing stations at Cedar Rapids and Mapleton, Iowa. At Mapleton, a community of 1600, Mr. Kohl bought the existing gas plant and distribution system. The income from the distribution of gas through the mains, he says, pays the overhead of the distributing station to dealers. District offices are maintained at Columbus, Neb., De Kalb and Freeport, Ill., Mankato, Minn., Clinton, Mo., Waterville, Kan., and Alta, Iowa.

Thirty-five company trucks are in full-time use hauling gas. In addition, the company's 926 dealers have local trucks.

Gas in tank car lots is sold wholesale to Chicago and Milwaukee. Out of Cedar Rapids and Mapleton, the Bupane Gas Co. cares for some retail servicing.

■ ■

Phantom Servant Film Is Available to All Companies

The Phantom Servant, a film designed to promote the modern automatic gas range, and the demonstration accompanying the film are available to any gas utility which may care to use this form of promotion, according to word received from F. J. Hatch, publicity director, Wisconsin Public Service Co., Green Bay, Wis., originator of the demonstrations.

A description of the film and the demonstration was published on page 114 of the May, 1937 issue of *GAS*. A picture accompanying the article was taken during a demonstration in Green Bay, presented under the direction of Mr. Hatch and the manager of the Fox Orpheum Theatre. The picture was erroneously stated to be of a demonstration in Milwaukee.

■ ■

Bryant Heater Introduces Winter Air Conditioner

A winter air conditioning unit operating upon new principles has been announced by The Bryant Heater Co., Cleveland, Ohio. Automatic in every respect, the new unit heats, circulates, humidifies and filters the air.

A principle of operation known as the pressure-suction principle, is said to cut down heat losses by radiation to a minimum. Proper balance between cubical contents of the home to be heated and the capacity of the blower permits low-velocity circulation with minimum noticeable air movement.

The new winter air conditioner is offered in six sizes, of rates at 100,000. 132,000, 200,000, 264,000, 300,000 and 364,000 B.t.u. per hr.

■ ■

Perfex Corp. Adds to Staff

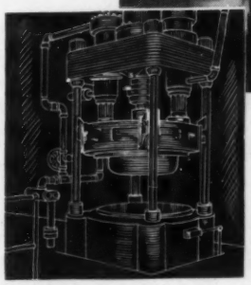
Perfex Corp., Milwaukee, Wis., manufacturing a complete line of automatic controls for heating, refrigerating, and air conditioning, have appointed T. H. Creears, 1824 South Hope St., Los Angeles, Calif., as their representative for Southern California.

Texas Company Installing Thirty Plants Monthly

Between 25 and 30 butane plants are being installed monthly in the Corpus Christi and Rio Grande Valley territory by Nueces Hardware and Implement Co., Corpus Christi, Texas, according to Jack Uhse, in charge of Electrolux sales and service. Edwin F. Flato is president of the company.

Vapo-gas, manufactured by Vapo-Gas Corp., San Antonio, Texas, is distributed. It has a 3300 B.t.u. content. All installations are underground.

According to Mr. Uhse the demand for these plants is increasing so rapidly that at times the company has difficulty in meeting all orders.



THERE'S MORE THAN EQUIPMENT BEHIND HACKNEY CONTAINERS

• Manufacturing competence, designing skill, and years of experience are responsible for the satisfactory performance of the millions of containers bearing the Hackney trade-mark.

Many industries have turned confidently to the Pressed Steel Tank Company for the most practical and economical solution of their container problems. Numerous metals have been used in developing containers of almost every conceivable shape for all types of gases, liquids and solids.

Economy, dependability, efficiency and long life are characteristics of Hackney standard containers and special shapes—both in welded and seamless construction. Let a Hackney engineer help you solve **your** container problem. There is no obligation. Write today.

Hackney MILWAUKEE

PRESSED STEEL TANK COMPANY

208 S. La Salle St., Rm. 1185, Chicago
666 Roosevelt Bldg., Los Angeles
1363 Vanderbilt Concourse, New York
6633 Greenfield Ave., Milwaukee

Containers for Gases, Liquids and Solids

THE "SALES SERVICE" PLAN

(Continued from Page 13)

"Mrs. Brown, the Pacific Gas and Electric Co. (or the Company) is adopting a policy of closer contact with our customers in an effort to learn better methods of personal service. I am the Company sales service representative in this district. It is my duty to get acquainted with you and to learn if you have in mind any ways in which your service can be bettered." (Customer reply.)

POSITION WANTED—First class meter repairer and prover would like to connect with Gas Company requiring experienced man. Fourteen years as shop foreman. Capable of installing systematic shop routine that insures production and efficiency. American, married, and A-1 credentials. Address Box 101, care of GAS, 810 So. Spring St., Los Angeles, Calif.

Patents and Trademarks
Protect your most valuable assets. Expert service. Prompt attention.
Write
LESTER L. SARGENT
Registered Patent Attorney
1115-K St., N. W., Washington, D. C.

"Another important duty is to learn if your gas and electric appliances are giving the best possible service. We have found homes where the customer was not getting the best results, either because of seemingly poor adjustment, or sometimes because of the condition of the type of appliance itself. Frequently they did not realize this."

(Customer reply.)

"May I look over your equipment with you? Perhaps the operation of your appliances can be improved."

This is a "purpose" talk. It is the only "canned" part of the interview. Use of this talk is insisted upon. Of course rather detailed instructions supplement the talk, that is, in manner of approach, following the various leads of the customer, etc., the point being to make it clear that the company desire to give the customer the greatest satisfaction and dollar value in use of gas (and electricity) is well founded and sincere. Every customer will be reached with this service—and in due time called upon once more.

It would be interesting to conclude this review of the sales-service plan by detailing the perfect results obtained. But of course the results are not perfect. Nor have all expectations been met. There has been sufficient evidence of value, however, to encourage efforts to follow the plan and better it by experience.

Recap of Results

After some three years of operation, the 1936 recap of results is interesting. Three domestic crews in 12 months interviewed 26,101 customers and explained the company's desire to cooperate in offering the maximum value of service in every case. Some 5,010 customers felt that additional or better appliances were needed to secure full value of the service. In three years of operation 88,777 customers have been contacted on the district survey plan and 15,962 came to realize the opportunity of better use through better appliances. Naturally all these prospects have not been closed. But about 20 per cent actually purchased. That is to say, 994 sales were made by our representatives to fill a need made evident by their calls. From these sales an added annual revenue of $32,772 will result. A strikingly interesting fact is that 23.1 per cent of the entire sales from these crews resulted from this district survey. And it must be remembered that this result occurred nothwithstanding an employee prospect plan which provided some 8,292 prospects during the year, a large number of which were distributed to these district crews. Also an energetic advertising campaign and active floor displays provided other leads to follow. To these prospect results add 1239 which were distributed to dealers, both gas and electric.

One becomes curious after all this recital as to what the customers come to think as a result of these contacts and sales. A sampling at random indicates that generally they are pleased with the effort. Of course the idea hasn't registered permanently with a number due probably to haste or some failure on the part of our representatives. But an encouraging number of customers do speak appreciatively of the effort. Beyond this sample comes the major question of satisfaction and good will as a result of a purchase. Only major heating and water heating (limited) are involved. Our last sampling of results in these was through mail and return card

GAS CONTROLS
DOMESTIC & INDUSTRIAL

A complete line of magnetic gas valves and room thermostats manufactured by the originators of the Quiet A.C. Solenoid. Each control is the creation of a staff of engineers working endlessly to develop and painstakingly to perfect the most efficient control for each job to be done.

GENERAL CONTROLS

NEW YORK • CLEVELAND
KANSAS CITY • SAN FRANCISCO

During the sixty day period from July 1 to August 31, the annual Summer Gas Heating Campaign will be held throughout P. G. and E. territory.

Above is a copy of the campaign billposter with its short, compelling story. Behind this poster is a full schedule of newspaper advertisements.

In addition to posters and newspaper advertisements there will be 989 truck banners and 300,000 bill stickers. A total investment of approximately $40,000.00.

Under a new plan which includes a set price for "simple installation," CIRCULATING HEATERS will be back in the campaign on a really profitable basis.

Complete information as to discount, terms, installation, advertising, etc. is given in our regular monthly letter which accompanies the proofs of our advertisements.

Official campaign rules have been outlined in another letter and anyone not receiving this information should get in touch with our local office immediately.

GOLDEN GATE INTERNATIONAL EXPOSITION 1939

P·G·and E·

PACIFIC GAS AND ELECTRIC COMPANY

Owned • Operated • Managed by Californians

G 207-737

methods. For 490 samples mailed out, 122 replies were received. Of this number 97 found the appliance "entirely satisfactory." This gave opportunity for the balance to be made so regardless of how minor the complaint might be. One hundred ten affirmed the satisfaction found caused them to recommend gas heating to friends. One hundred nineteen stated their dealings with our representatives were entirely satisfactory. And again in this group the number was made 100 per cent by proper explanation. An analysis of the complaints invited by the letter, all of which were remedied, follows:

High gas bills	3
Defective part of appliance	2
Complaint on not enough heat	6
Desire appliance installed in another location	2
Wanted pilot removed on C-1 conversion	1
Feared for health of family through use of gas	1
Various adjustments needed	6
Returned card as a joke	1

And so it may be concluded that merchandising on a good will personalized basis is nearly 99 per cent and can be made 100 per cent effective. Every case concluded takes the customer out of the "routine" group into one of personal and individual status.

There is more, however, than personal contact and a possible friendly transaction in this method. It has been found that literally hundreds of people have an idea their service can be improved but fail to make this known to the company. Hundreds actually do not know their slight dissatisfactions can be cleared up. The personal contact of Sales - Service representatives with their purpose talk make a perfect setting to uncover these cases. For the year 1936 under this review 2418 such instances were disclosed. Not by seeking complaints, with the flood of results all experienced operators know, but by the visit in the home method an improved and pleased attitude has resulted from this service. In the three years of operation of this plan, 10,404 such cases have developed. The percentage is one request for our service out of every 8½ calls.

This article purports to discuss a plan which seems to hold further possibilities. Its operation is not perfect by a long way. The crews handling the job have quotas in sales to make and make them. But the manner of handling the supervision of these sales, the method of payment to the men with base salary, survey fee and commission and the eagerness to make each transaction a profitable one for the customer is, without a doubt, making many "routine" customers feel the company is a human, eager-to-please organization.

■ ■

H. B. Johns Wins Promotion With Peoples Gas Light

Harold B. Johns has been appointed assistant superintendent of the general service department of The Peoples Gas Light & Coke Co., Chicago, Ill., through the executive order of the vice-president in charge of customers' service for the company.

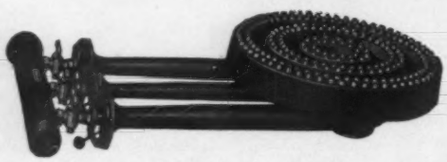
Mr. Johns transferred to the service department six months ago from the sales department. He is chairman of the Approval Requirements committee of the American Gas Association for central heating gas appliances.

■ ■

Gas Compression Experiments

A new method to determine to what extent gas may be compressed, which does not involve actual compression of it, has been announced by the United States Bureau of Mines. It was devised in the laboratory of the helium plant at Amarillo, Texas.

Johnson Triple Atmospheric Ring Burners—No. 40ABC

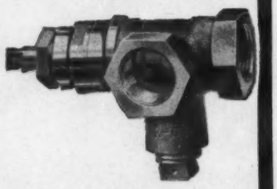


Efficiency, utility and economy are outstanding factors in the success of this powerful, durable unit. Burners may be used singly, in pairs or in triple. Each burner has two rows of raised gas port holes and is individually controlled. Johnson Venturi Mixers and Tubes; A.G.A. Type Valves and Johnson Patented Direct Jet Regulators assure proper adjustment, perfect combustion and high flame temperature. Investigate this burner now. Write for free catalog.

JOHNSON GAS APPLIANCE CO. Cedar Rapids IOWA

G-501-R-Flathead Recessed Iron Body Brass Plug Gas Stop

"by Kitson" . . . The Surest Guarantee of Quality for Forty Years!



G-450—High Pressure Gas Meter Shut-Off Valve

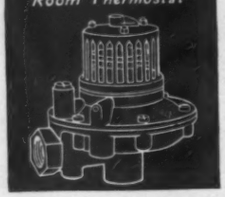
K-CO TRADE MARK

KITSON COMPANY
2409-15 Westmoreland St. Philadelphia, Pa.
Kitson Safety Devices (Lovekin Patents) for Domestic Water Heaters
Quality Brass Goods for Gas, Water and All Plumbing Uses
ESTABLISHED 1897

K-CO TRADE MARK

BUILD YOUR HOUSEHEATING LOAD WITH KLIXON CONTROLS

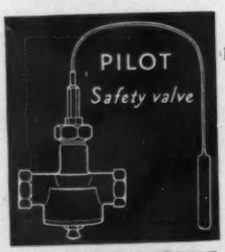
DIAPHRAGM Room Thermostat



These two advanced Klixon devices give exact automatic temperature control and assure positive pilot protection for your gas-fired space heaters . . . provide sales features that make it easy to sell gas heating.

Write today for descriptive bulletins.

PILOT Safety valve



SPENCER THERMOSTAT COMPANY
Unit of Metals & Controls Corporation
87 FOREST STREET • ATTLEBORO, MASSACHUSETTS

E. A. Munyan of Cincinnati on Tour of Gas Properties

E. A. Munyan, manager of the gas department, The Union Gas & Electric Co., Cincinnati, Ohio, last month visited the Mid-continent and Pacific Coast territories on an inspection tour of gas properties. Mr. Munyan will return to Ohio by way of the Pacific northwest, making a stopover at Victoria, B. C.

E. A. MUNYAN

Mr. Munyan is widely known throughout the industry and has been active in American Gas Association work during the past several years. During his career in the industry he has served with the United Gas Improvement Co., Philadelphia, the Allentown Bethlehem Gas Co., Allentown, Pa.; and the Northern Indiana Gas and Electric Co., Michigan City, Ind. He became affiliated with the Union Gas & Electric Co. in 1926, being advanced to his present position in 1929.

■ ■

Monongahela Co. Advances Leatham, Ireland, White

Charles H. Leatham, commercial manager of The Monongahela West Penn Public Service Co., Fairmont, W. Va., has been elected a vice-president of the system by the board of directors. He joined the company in January, 1935, after many years with West Penn Electric and Potomac Edison systems, affiliated companies. He will continue to direct the commercial activities of Monongahela.

Thomas J. Ireland, member of the treasury department in Fairmont, has been appointed an assistant treasurer.

Stanton A. White, of the operating and engineering department headquarters at Fairmont, has been made division engineer in the Panhandle. H. A. Baldwin, who held the position, has been transferred to Fairmont as distribution engineer, to succeed O. W. Kotela, who recently resigned.

■ ■

Movie Laid in Gas Kitchen

A one reel motion picture comedy in technicolor, produced by Metro-Goldwyn-Mayer and entitled "Penny Wisdom," features a modern all-gas kitchen. The story is about Chloe Smudge, who runs into stormy weather while trying to prepare a meal for her husband's employer. She finally calls in Prudence Penny, who cooks an appetizing meal on the latest model gas range.

■ ■

Booklet Out on Condensation

Condensation Engineering Corp., Chicago, Ill., has issued a bulletin showing how condensation is successfully eliminated and describing Vitroliner, the permanent chimney liner manufactured by the company. Another bulletin issued deals with the Howle gas-fired incinerator designed for homes.

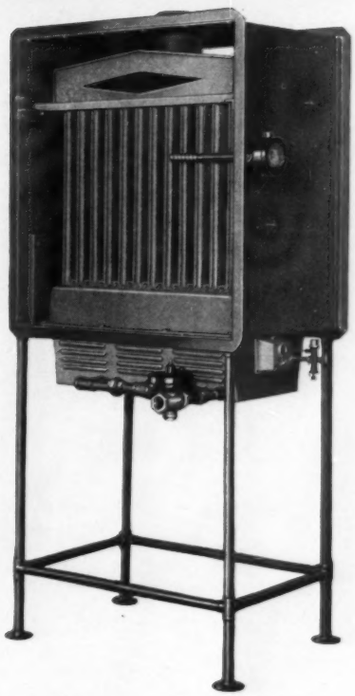
Now

IS THE TIME

TO SELL YOUR

CUSTOMERS

GAS HEATING AND AIR CONDITIONING



THERE'S A PACIFIC FOR EVERY HEATING NEED

- DUCT UNIT HEATERS
- FORCED-AIR UNITS
- GRAVITY FURNACES
- BLOWER FURNACES
- GAS STEAM RADIATORS
- FLOOR FURNACES
- WATER HEATERS
- CIRCULATORS

PACIFIC DUCT UNIT

A year 'round gas-fired unit occupying small space. Engineers, architects and contractors find Pacific Duct Units the answer to most of their perplexing heating and air conditioning problems. They are especially designed for installation in ducts for complete winter heating and air conditioning, and for use in coordination with summer cooling equipment. They are made in sizes from 55,000 to 300,000 BTU capacities, and may be used in multiples up to 1,500,000 BTU's or even more if necessary.

PACIFIC GAS RADIATOR COMPANY

1740 WEST WASHINGTON BLVD., LOS ANGELES, CALIFORNIA

METALBESTOS

GAS VENT AND FLUE PIPE

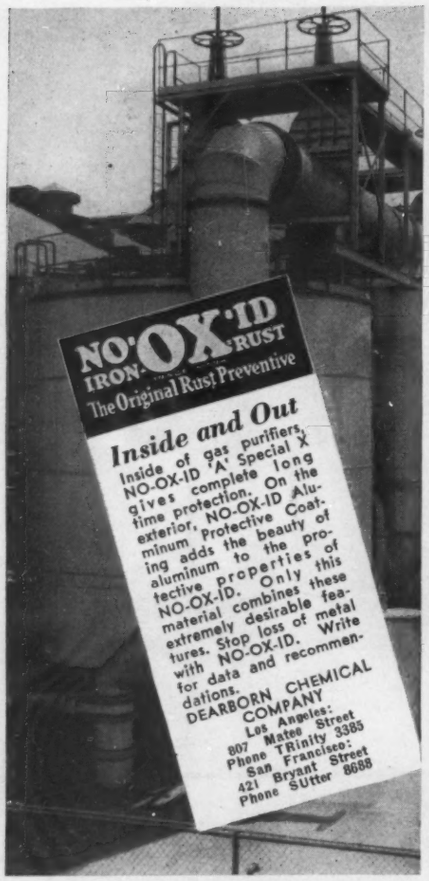
U. S. Letters Patent Nos. 2013193 and 2076210

BUILT FOR **DURABILITY** WITH THE MAXIMUM AMOUNT OF **SAFETY** WITHOUT SACRIFICING THE PRINCIPLES OF **EFFICIENCY.** ITS GENERAL CONSTRUCTION MAKES IT **EASIEST TO INSTALL.**

METALBESTOS IS UNEQUALED FOR PERFORMANCE AND LOW COST.
WRITE FOR DESCRIPTIVE FOLDER AND PRICE LIST

WILLIAMS-WALLACE COMPANY

160 HOOPER STREET SAN FRANCISCO, CALIF.


NO-OX-ID
IRON-RUST
The Original Rust Preventive
Inside and Out
Inside of gas purifiers, NO-OX-ID 'A' Special X gives complete long time protection. On the exterior, NO-OX-ID Aluminum Protective Coating adds the beauty of aluminum to the protective properties of NO-OX-ID. Only this material combines these extremely desirable features. Stop loss of metal with NO-OX-ID. Write for data and recommendations.
DEARBORN CHEMICAL COMPANY
Los Angeles:
807 Mateo Street
Phone TRinity 3385
San Francisco:
421 Bryant Street
Phone SUtter 8688

★

AN

AUTOMATIC

PILOT VALVE

Made By

DOMESTIC

★

. . . for WATER HEATERS

Means 100%
INSTANTANEOUS SHUTOFF and shuts off the pilot as well as the main supply. After operating it is reset by merely turning a button.

APPLIANCE Manufacturers are invited to write us for further particulars

•

DOMESTIC
MANUFACTURING CO.
700 East Florence Ave.
LOS ANGELES, CALIF.

Golden Celebration of Ohio Gas Discovery on NBC

The hectic days of industrial boom in the gas and oil fields of Ohio half a century ago were recalled in a broadcast from the Golden Celebration of Oil and Gas at Findlay, Ohio, June 21, over the NBC Blue Network.

Axtell J. Byles, president of the American Petroleum Institute, and R. W. Gallagher, past president of the American Gas Association, were heard as speakers from the dedicatory ceremonies on the site of the new monuments erected at the old Oesterlen and Karg wells, the first and largest gas wells in the area.

Souvenir medal commemorating the application of Ohio natural gas to the mechanical arts. The medal, dated June, 1887, belongs to F. S. Raymor of the East Ohio Gas Company.

Natural gas at Findlay was at first distributed free to factories to induce them to come to the city, but it rapidly became depleted because of enormous waste. The subsequent discovery of oil fields saved the city from the loss of its prosperity.

■ ■

Gas Appliance Exhibit Covers 16,000 Sq. Ft. at Texas Fair

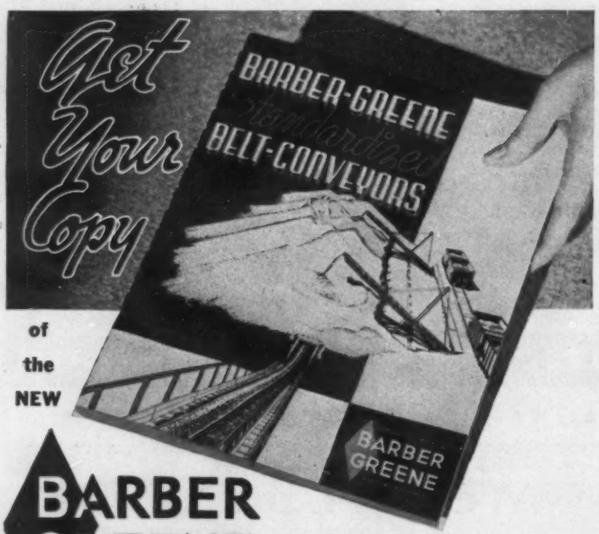
A gas appliance exhibit, covering 16,000 sq. ft., and sponsored by the Lone Star Gas System, is an attraction at the Greater Texas and Pan American Exposition, which opened in Dallas on June 12 and will continue through October 31. The display is a co-operative project of many nationally known manufacturers of gas appliances.

The exhibit is in the Varied Industries Building. The space occupied is air conditioned by a gas-powered system. A cooking school and motion picture demonstrations of modern gas appliances are part of the project.

■ ■

Combustion Engineer

An immediate vacancy on the permanent staff of a well known equipment manufacturer now available. Must be experienced in application of manufactured, natural, propane and butane gas for industrial purposes. Sales experience preferred. Give full details of education and experience, age and salary expected. Address G A S, 810 So. Spring St., Los Angeles, Calif.



of the NEW

BARBER GREENE

BELT CONVEYOR CATALOG AND MANUAL

MAIL TODAY— G 37-17

Barber-Greene Company, Aurora, Illinois—Gentlemen: Send me without cost or obligation your new 116-page Belt Conveyor Catalog and Manual that not only shows the complete line of B-G *Standardized* Belt Conveyors, but has 20 pages devoted entirely to Engineering Data.

Name.....

Company.....

Address.....

City..... *State*.....

Flexible Stove Connection Cuts Installation Time

A ductile, non-collapsible gas stove connection, by which a gas stove, it is claimed, can be installed in less than three minutes has been placed on the market by The Gray-Wilson Company, 1627 West Fort St., Detroit, Mich. The connection, called the Romine, consists of two self-sealing brass fittings and a specified length of special aluminum pipe which, the company states, adjusts itself and will not collapse. The aluminum pipe (outside diameter ⅝ inch; inside, ½ inch) has the capacity of a ¾-inch pipe. The company's literature states that the connection resists all severe twisting, bending, and other strains; is guaranteed not to leak; meets the requirements of the American Gas Association; does away with measuring, pipe, fittings, tools, cutting and threading; eliminates the necessity to work in cramped quarters; adjusts itself when the stove is pushed against the wall.

■ ■

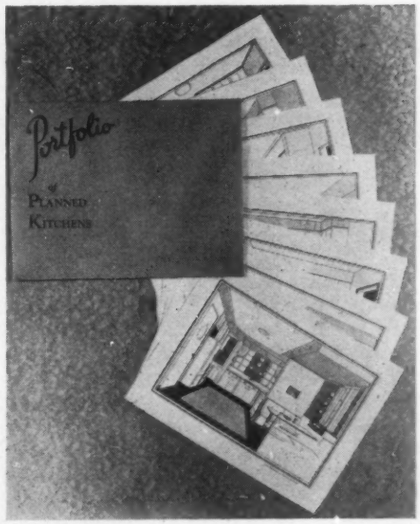
Gas Service Co. Range Drive Scores 1675 Sales

In the second gas range sales campaign of 1937, held during May, The Gas Service Co., Kansas City, Mo., reached a total of 1675 sales and installations. During the first campaign, held in March, sales and installations numbered 1412. The figures include the sales and installations from all the properties of the Gas Service Co.

■ ■

Portfolio of Planned Kitchens Available for Advertising

A "Portfolio of Planned Kitchens" is now being offered to the gas industry. It consists of a heavy cover, in two shades of blue, and eight kitchen illustrations (each 8½" x 11") in four colors. Inside the cover is a kitchen modernizing story, suggestions for color in the kitchen, and space for individual company name and copy imprinting. The imprinting space may be used to tell about a kitchen modernizing department or any other phase of this activity in which a company is engaging.

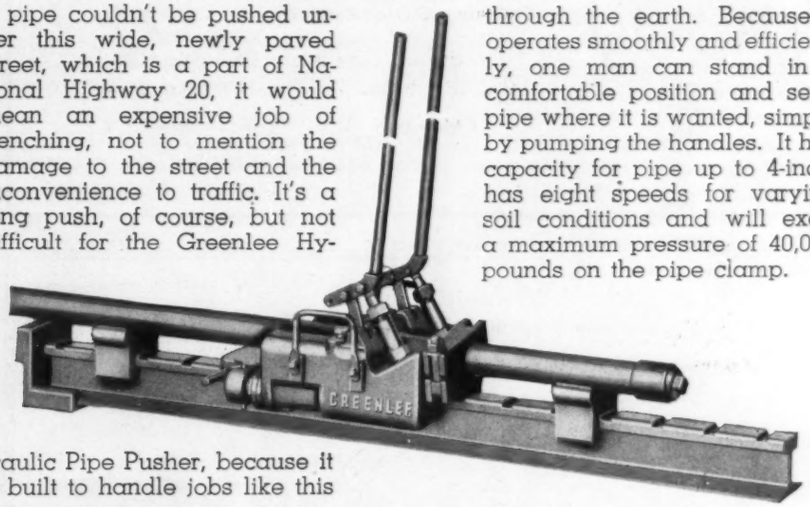


A free sample of the "Portfolio of Planned Kitchens," and complete details, will be sent on request by the Bishop Publishing Co., 308 West Washington St., Chicago, Ill.

It's a Long Push to the Opposite Curb

...But the GREENLEE is equal to the Job

If pipe couldn't be pushed under this wide, newly paved street, which is a part of National Highway 20, it would mean an expensive job of trenching, not to mention the damage to the street and the inconvenience to traffic. It's a long push, of course, but not difficult for the Greenlee Hydraulic Pipe Pusher, because it is built to handle jobs like this one.



The Greenlee is a compact tool that is designed to use hydraulic pressure to force the pipe through the earth. Because it operates smoothly and efficiently, one man can stand in a comfortable position and send pipe where it is wanted, simply by pumping the handles. It has capacity for pipe up to 4-inch, has eight speeds for varying soil conditions and will exert a maximum pressure of 40,000 pounds on the pipe clamp.

Investigate this money-saving tool. Write for full information.

GREENLEE TOOL CO., 1700 COLUMBIA AVE., ROCKFORD, ILLINOIS

BETTER COPY WINNERS NAMED BY ADVERTISING ASSOCIATION

PRIZEWINNERS in the 1937 Better Copy Contest, conducted annually by the Public Utilities Advertising Association for all gas, electric, and street railway companies in the United States and Canada, were announced during the annual convention in New York City, June 22. Kenneth Magers, Cincinnati Gas and Electric Co., Cincinnati, Ohio, was chairman of the Better Copy Contest Committee and is the newly elected president of Public Utilities Advertising Association.

The awards of interest to gas companies are as follows:

Gas Load Building Newspaper Advertising. — Premier Awards: The Peoples Gas Light and Coke Co., Chicago, Ill.; Consolidated Edison Co. of New York. Awards of Excellence: Rochester Gas & Electric Corp., Rochester, N. Y.; New York Power and Light Corp., Albany, N. Y.

Gas Public Relations Newspaper Advertising. — Premier Award: Los Angeles Gas & Electric Corp., Los Angeles, Calif. Awards of Excellence: Consolidated Edison Co. of New York; Public Service Electric and Gas Co., Newark, N. J.; Lone Star Gas Co., Dallas, Texas.

Gas Merchandise Newspaper Advertising. — Premier Award: New York Power & Light Corp., Albany, N. Y. Awards of Excellence: Syracuse Lighting Co., Syracuse, N. Y.; British Columbia Electric Railway Co., Vancouver, B. C., Canada.

Material Designed to Promote Employee Selling. — Premier Award: Philadelphia Electric Co., Philadelphia, Pa. Award of Excellence: Public Service Co. of Northern Illinois, Chicago.

Employee Publications. — Premier Award: Public Service Corp. of New Jersey, Newark, N. J. Awards of Excellence: Consolidated Edison Co. of New York; Detroit Edison Co., Detroit, Mich.

Bill Enclosures and Customer Publications. — Premier Award: Consolidated Edison Co. of New York. Award of Excellence: Public Service Co. of Colorado, Denver.

Direct Mail Advertising.—Premier Award: Consolidated Edison Co. of New York. Award of Excellence: British Columbia Electric Railway Co., Vancouver.

Gas Displays. — Premier Award: Consolidated Edison Co. of New York. Awards of Excellence: The Brooklyn Union Gas Co., Brooklyn, N. Y.; Kings County Lighting Co., Brooklyn, N. Y.

Poster Advertising. — Premier Award: Southern California Edison Co., Los Angeles, Calif. Awards of Excellence: Consolidated Edison Company of New York; Duquesne Light Company, Pittsburgh, Pa.

Radio Advertising. — Premier Award: Pacific Gas and Electric Co., San Francisco, Calif. Award of Excellence: Philadelphia Co., Pittsburgh, Pa.

Officers of the Public Utilities Advertising Association who were elected at the convention are, in addition to Mr. Magers, president:

Howard F. Weeks, Consolidated Edison Co. of New York, first vice-president, E. K. Hartzell, Lake Shore Electric Railway Co., Sandusky, Ohio, second vice-president; H. J. Rowe, Iowa Electric Light and Power Co., Cedar Rapids, third vice-president; H. W. Olcott, Jr., Daniel Starch, New York City, secretary; H. C. Cannon, The Brooklyn Union Gas Co., Brooklyn, N. Y., treasurer.

Directors to serve three years are F. W. Crone, Consolidated Edison Co. of New York; J. V. Macdonald, Edison Electric Illuminating Co. of Boston; Clayton Cassidy, The Peoples Gas Light and Coke Co., Chicago.

Director to serve two years: Guy W. Philip, Kings County Lighting Co., Brooklyn, N. Y.

■ ■

H. E. Thompson, Gas Engineer, Joins Delco Frigidaire

Harry E. Thompson, gas product engineer, formerly with the General Gas Light Co. of Kalamazoo, Mich., has accepted the position of gas sales engineer with the Delco Frigidaire Conditioning Division of General Motors Sales Corp., Dayton, Ohio. He will specialize in the sale and application of Delco gas-fired central heating equipment. Mr. Thompson was at one time engineer for the A.G.A. Testing Laboratories.

The Goodman Stopper

The Reliable Shut-off for Street Mains

Equipped with Improved Patented Locking Sleeve, which locks both handles to the pipe. Stopper cannot slip. Gas cannot pass.

Safety Gas Main Stopper Co.
523 Atlantic Avenue, Brooklyn, N. Y.

Pac. Coast Rep.: C. B. Babcock Co.
475 Eleventh Street
San Francisco, California

Mueller Gas Era Steel Furnace has outsold every other gas furnace for the past seven years. Long life, economical operation, satisfied customers are the answers.

L. J. MUELLER
FURNACE COMPANY
MILWAUKEE

SERVICE!

★

SERVICE in fact as well as in name. Hundreds of thousands of these Reynolds Service Regulators illustrated at the right are giving satisfactory service. You can be sure that they will give reliable performance over a period of many years.

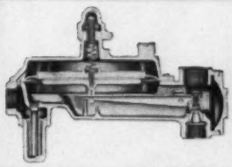
REYNOLDS Regulators give more years of operating performance and get on the maintenance cost sheet less than any other units on the market. Reynolds policy of manufacture—the thousands of Regulators giving satisfactory performance after years of service is substantiating proof of the ability of these Regulators.

REYNOLDS is glad to co-operate in working out and solving your gas control problems. Write.

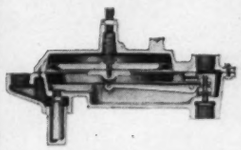
★

REPRESENTATIVES:
Eastern Appliance Company
Boston, Mass.

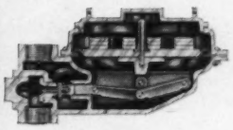
BRANCH OFFICES:
421 Dwight Building,
Kansas City, Mo.
2nd Unit Santa Fe Building
Dallas, Texas



★ MODEL 10
All parts accessible and interchangeable while in pipe line. In spring or dead weight types.



★ MODEL 20
Working parts so accurate as to permit complete interchangeability in shop. In spring or dead weight types.

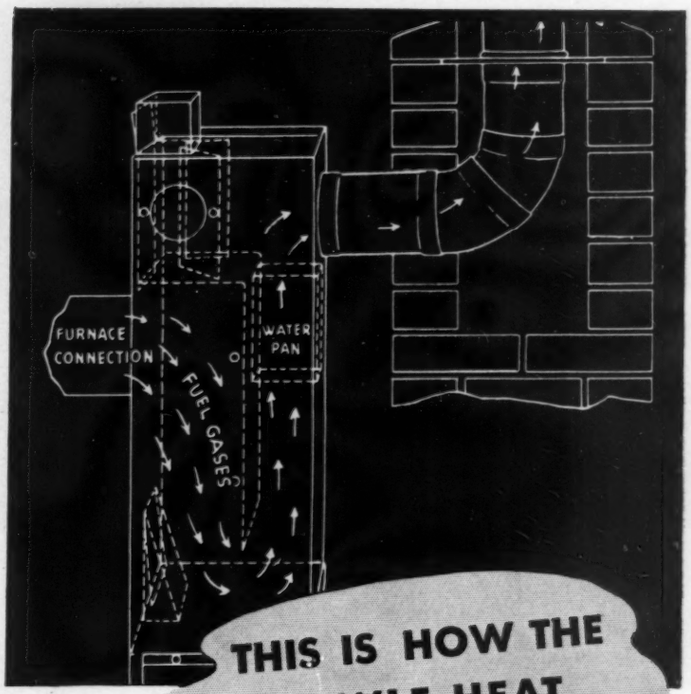


★ MODEL 30
Is manufactured in either spring or dead weight adjustment for horizontal or vertical connections. All parts accessible while in pipe line.

★

REYNOLDS GAS REGULATOR CO.
ANDERSON, INDIANA, U.S.A.

GAS CONTROL SINCE 1892



THIS IS HOW THE HOWLE HEAT EXTRACTOR WORKS

The arrows indicate the flow of radiant energy through the Howle Heat Extractor demonstrating how it extracts heat, eliminates condensation by withholding moisture in storage pans, and then re-evaporating it through Vitroliner, the permanent chimney liner. Radiates captured heat, raising basement temperatures 10° to 20°. Maintains a more uniform heat by helping to warm the first floor, and costs absolutely nothing to operate.

Complete information and prices on our entire line will be sent on request

VITROLINER
the permanent Chimney Liner

CONDENSATION ENGINEERING CORPORATION
TELEPHONE MONROE 1031
335 South Western Avenue, Chicago

NEW LOW COST
FRASER

Gas Furnace
and
Winter
Air Conditioning
System

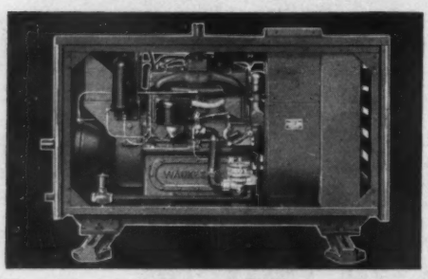
Sensational in performance, low original cost and low operating cost.

Write
for details
today.

Manufactured by
Fraser Furnace Company
Stockton, Calif.

Distributed by
H. R. Basford Company
San Francisco Los Angeles

Fully Automatic
Sound-Silenced
DELUXE
GAS ENGINE POWER UNITS
10 hp to 87 hp



For Residential and Commercial
AIR CONDITIONING AND REFRIGERATING
Equipment and all
GENERAL POWER applications
★
Standard Gas Engines and Power Units, 10 hp to 350 hp
★
GAS POWER DIVISION
WAUKESHA MOTOR COMPANY
WAUKESHA WISCONSIN

This group has gathered to celebrate the production of the one millionth Servel Electrolux refrigerator.

Servel Refrigerator No. 1,000,000

THE millionth Servel Electrolux refrigerator, manufactured by Servel, Inc., came off the assembly line in Evansville, Ind., on May 20 and was greeted by President Louis Ruthenburg and other officials, saluted by the factory whistle and a bomb exploded on the river front. Two days later the Evansville Chamber of Commerce sponsored a parade to celebrate the occasion. The parade was witnessed by approximately 40,000 persons.

The millionth Servel Electrolux refrigerator was specially adorned with gold plated insignia and gold trimmings. The picture shows the refrigerator as it was welcomed by officials and Miss Marjorie Duncan, chosen by her fellow factory workers as "Miss Servel of 1937," and her maids of honor, Daythol Diekmann and Emma Flentke of the office force.

From left to right in the picture are George L. Roach, assistant to the president; H. A. Strong, executive vice-president; George S. Jones, Jr., vice-president and general sales manager; President Ruthenburg; Miss Diekmann; Miss Duncan; Miss Flentke; W. E. Baker, vice-president in charge of production, North I. Townsend, secretary-treasurer; William R. Hainsworth, vice-president in charge of engineering, and Vice-President F. E. Sellman.

Chemistry's Part in Modern Life Told in Book

The service of chemical industry is the theme of *Man in a Chemical World*, by A. Cressy Morrison, (Scribner's, $3.00). It reviews the vital part that chemistry plays in modern life, treating the technical subject matter with simplicity for the non-technically trained but intelligent reader. The main purpose of the book, the foreword states, is to awaken man "to the realization that the chemical industries in the United States render a service that touches practically every activity in which he engages, and that he is utterly dependent upon these industries not only for the necessities and luxuries of life, but also for his very existence."

Among the various chapters are those devoted to nature as a chemist. chemistry applied to maintenance of health. to food production and preservation. to transportation, to means of communication (paper, ink, photography, telegraph, telephones, radio), to clothing and housing materials.

■ ■

Illinois Utilities Cut Rates

Permission to reduce rates from 15 to 18 per cent for water and space heating has been granted by the Illinois Commerce Commission to North Shore Gas Co., Chicago, and Illinois Northern Utilities Co., Dixon. The decrease will mean a saving to customers of $70,000 a year. The companies serve many communities in the Chicago area.

■ ■

Independence Improvement

Independence Gas Co., Independence, Iowa, has announced that it will add improvements costing $10,000, including auxiliary storage tanks and high pressure mains to the plant in the business district.

KEEP THE
HOME FIRES BURNING
with Clean Gas

● An investment in Blaw-Knox Gas Cleaners is an investment in freedom from service complaints.

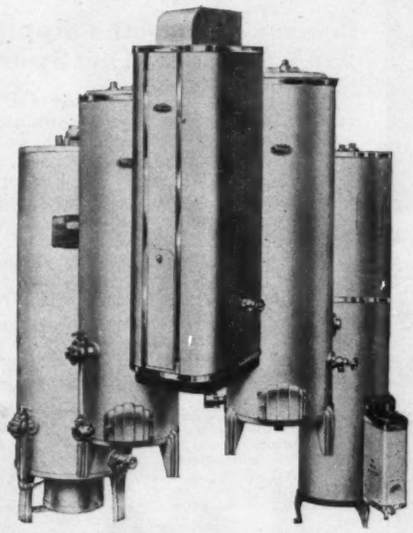
● It insures continuity of service and customer satisfaction, all dividend payers.

BLAW-KNOX COMPANY
2035 Farmer's Bank Building, Pittsburgh, Pennsylvania

BLAW-KNOX GAS CLEANERS

BLAW-KNOX

Up to the Minute - - -



● There is a Hotzone Automatic Gas Water Heater for every domestic requirement . . . six different types and many color combinations.

STYLE: Modernistic design and color—plenty of eye appeal.

CONSTRUCTION: Sturdily built of most enduring materials.

ECONOMY: Highly efficient in operation.

SERVICE: A maximum of usage with a minimum of service requirement.

SILENCE: Utilizes silent automatic luminous flame burner.

Write for Catalog

WELSBACH COMPANY
GLOUCESTER CITY, N. J. — BRANCHES — CHICAGO, SAN FRANCISCO

Architect's drawing of the new offices of the Pressed Steel Tank Company. The building was ready for occupancy last month.

TANK CO. IN NEW QUARTERS

THE new, thoroughly modern, brick and concrete structure at 1437 South 66th St., Milwaukee, will double the Pressed Steel Tank Co.'s office space. The general office staff and the purchasing, timekeeping, engineering and sales departments moved into the new quarters during last month.

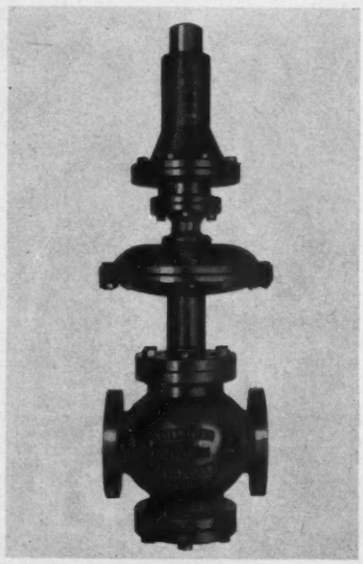
President H. O. Brunder, in commenting on the new building, stated that the construction of the new office building has been necessitated by the steady growth of Pressed Steel Tank Co.'s business. The new fireproof structure will be modern in every respect and is completely air conditioned. It will enable much greater efficiency in the handling of normal office routine and provide some room for expansion to meet increased requirements.

The old office building, which has been in use for 35 years, will be utilized for storage space. The company manufactures a wide variety of metal containers for gases, liquids and solids under the trade name "Hackney."

■ ■

Natural Gas Equipment Makes New Boiler Regulator

Natural Gas Equipment, Inc., Los Angeles, Calif., announces a new regulator for automatically firing oil field boilers. This regulator is designed to meet the need for closer control of steam pressure on drilling boilers and to provide for the accurate regulation of the maximum and minimum gas pressure on the burner. The Boilertrol, the name of this new regulator, is a combined steam control regulator and reducing valve.



■ ■

Benson, Tombstone Apply for PWA Funds for Gas Systems

Application has been made for PWA funds for construction of municipally owned and operated natural gas systems in Tombstone and Benson, Ariz., according to Harvey J. Forward of Headman-Ferguson Engineers, Phoenix, Ariz., which made preliminary surveys and prepared estimates.

If the applications for loans are granted, both towns will vote on issuing revenue bonds to finance the projects. The El Paso Natural Gas Co. would supply the gas from the Jal field in southeastern New Mexico. The surveys provided the following estimates:

	Benson	Tombstone
Transmission line—2"	28,000 ft.	9,250 ft.
Distribution	24,800 ft.	25,300 ft.
Estimated consumers	156	170
Estimated Cost	$32,540	$25,670
Less 45% Grant	$14,650	$11,550
Amount P.W.A. Loan	$17,890	$14,120

■ ■

Chaplin-Fulton Bulletin

The Chaplin-Fulton Mfg. Co., Pittsburgh, Pa., recently issued bulletin No. 4146 on high pressure soft heat and "V-port" inside valves. The booklet contains technical data and is illustrated with line drawings.

MUELLER GAS DISTRIBUTION EQUIPMENT

The time-tested Mueller line includes Mueller Evenflow Service Regulators, Gas Stops, Service Stops, Stove Stops, Drilling and Tapping Machines, service boxes, meter trims and similar equipment. Write for description and prices.

MUELLER CO., Los Angeles, Calif.

Factories: Decatur, Ill.; Chattanooga, Tenn.; Los Angeles, Calif.; Sarnia, Ont.
Branches: New York and San Francisco

BASO

THERMO ELECTRIC SAFETY CONTROL FOR GAS BURNING APPLIANCES

BOILERS ★ FURNACES ★ CONV. BURNERS ★ SPACE HEATERS ★ UNIT HEATERS ★ AIR CONDITIONERS OVENS ★ RANGES ★ WATER HEATERS, ETC.

MILWAUKEE GAS SPECIALTY CO.
MILWAUKEE ★ WISCONSIN

GAS VALVE SERIES 500

ELECTRIC SWITCH SERIES 600

THEN . . .

The same long-lived material

A CENTURY AGO
—A cast iron gas main which has been in service in Boston for more than 100 years.

and NOW

but with modern mechanical joints

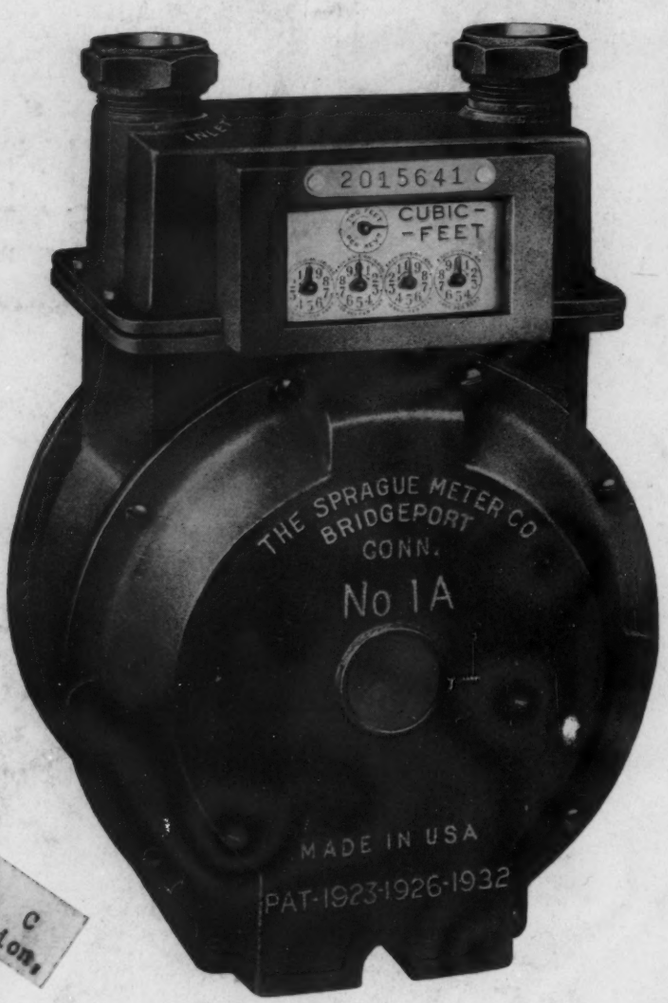
TODAY—A recent installation of mechanical joint cast iron pipe for high pressure gas service.

The gas industry is one of the few which has used, in a vital service, the same material for more than 100 years. Modern operating conditions have required the development of a bottle-tight mechanical joint but cast iron pipe itself remains the same enduring and economical material, fundamentally unchanged. Mechanical joint pipe is available in diameters from 1¼ to 84 inches.

CAST IRON PIPE

THE STANDARD MATERIAL FOR UNDERGROUND MAINS

The Cast Iron Pipe Research Ass'n, Thos. F. Wolfe — **Research Engr., 1013 Peoples Gas Bldg., Chicago**



Library of Congress, C
Att: Periodical Division,

SPRAGUE METERS

REDUCE OPERATING COSTS

THE SPRAGUE METER COMPANY

LOS ANGELES + + SAN FRANCISCO

BRIDGEPORT, CONN.